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Weekly Bulletin

Western Irrigation Agriculture

Vol. 15

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WEEKLY BULLETIN

OF THE OFFICES OF

WESTERN IRRIGATION AGRICULTURE

AND

DEMONSTRATIONS ON RECLAMATION PROJECTS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

Volume XV,

January to June,

1919.

WEEKLY BULLETIN

Of the Offices of

WESTERN IRRIGATION AGRICULTURE
and
DEMONSTRATIONS ON RECLAMATION PROJECTS.

Vol. XV.

JANUARY 4, 1919.

No. 1

Western Irrigation Agriculture

Field Notes.

San Antonio.

During the week ending December 21, the maximum temperature was 84, minimum 35, and greatest daily range 49. The total precipitation amounted to 1.63 inches.

Wet weather prevented field work after Tuesday. The remainder of the last cutting of hay was hauled in on Monday. Plats B6-3 and B6-9 were plowed and subsoiled, which completed fall plowing of cotton plats in the rotation experiments. Plowing of sorghum plats was started, the following plats being plowed: B4-12, B4-13, and A4-12. One day was spent in cleaning flax seed. The remainder of the cotton was taken to the gin for baling on Saturday.

Mr. Frederic Barbedette, of Algeria, spent Monday morning at the experiment farm, making observations on the work.

Under the auspices of the Jewish Welfare Board, the San Antonio Chamber of Commerce, and the Army authorities, a short course in agriculture was held at Camp Travis during the week. An exhibit of farm machinery, other educational exhibits and tractor demonstrations were held in connection therewith. Most of the lecturers were from the Extension Service of the Texas A. & M. College and the State Department of Agriculture. Mr. Letteer lectured each afternoon during the week on the subjects of "Good Seed" and "Soil Preparation."

During the week ending December 28, the maximum temperature was 64, minimum 28, and greatest daily range 23. The greater part of the week was cloudy with very little evaporation. The total precipitation was .94 inch.

No field work was done on account of the soil being too wet. Some odd jobs were done about the buildings. Most of the labor was employed in grubbing out mesquite brush along the fence row bordering the Corpus Christi road. In clearing out this fence row several years ago, a number of small mesquite were left to develop into trees, it being thought the row of trees would add to the attractiveness of the road. During the past season the effect of the trees on the crop rotation experiments began to be noticeable. Knowing that this effect would continue to increase each year, it was thought advisable to cut down all of these trees.

Demonstrations on Reclamation Projects.

Field Notes.

Truckee-Carson.

During the week ending December 21 there were received forty calls for assistance and seven visits were made to farms. Some time was spent cooperating with the state extension division in organizing a county farm bureau for Churchill County, which includes the greater part of the Truckee project. School district meetings were held in five out of the thirteen districts in the valley by the county agent leader with quite satisfactory results. Eighty-three applications for membership were received at these meetings. A general meeting for the county was held in Fallon on Saturday and much interest was shown. The organization was perfected at this meeting; officers were elected and a constitution and by-laws adopted. Further efforts toward launching the farm bureau and adding membership will be taken up after the holidays. The state extension division contemplates placing a county agent in the county as soon as a suitable man can be secured.

On Monday a carload of fat hogs was shipped out cooperatively by 11 farmers, the consignments ranging from three to twenty hogs each. The hogs were shipped to the Western Meat Co., at San Francisco. They were in transit about thirty hours, making the trip without unloading to feed and water. Heretofore the hogs have always been unloaded and fed in transit, but because of the very quick trip it was possible to make with this load, it was thought that the extra loss from shrinkage would not overbalance what the expense would have amounted to if they had been unloaded and fed. The total shipping expense, not including shrinkage, amounted to 70 cents per hundred pounds. The prices received were \$16.60 for prime hogs, 150 to 200 pounds; 16 cents for hogs weighing from 100 to 150 pounds, and 15-3/4 cents for heavy hogs.

A later cooperative shipment of hogs was planned for December 26 and all arrangements made, but upon inquiring for market quotations for the shipment it was learned that the markets at Reno and San Francisco at present are overstocked and will not quote prices. For this reason, the cooperative shipment will have to be postponed. The San Francisco papers have been reporting a congested condition at the packing plants for some time and the refusal to accept shipments of hogs does not come as a surprise.

During the past two weeks there has been shipped from the project eight carloads of dairy cattle, consisting of a few bulls and the remainder milk cows and heifers. These dairy cattle were shipped to a certified milk plant at Dixon, California. It is not very encouraging to see these dairy animals leaving the project in such numbers, in view of the fact that it has only been four years since the ancestry of these animals were imported into the project. The heifers that were shipped out were backed for the most part by very good bulls. The reason assigned for coming into Nevada for stock was that it is difficult to secure stock free from tuberculosis in California. All herds that contributed to the number of cattle that were shipped out were subjected to the tuberculosis test and

Truckee-Carson (continued).

when as many as 10 per cent of the herd reacted, no animal from that herd would be accepted. The present price of \$15 per ton for hay in the stack and the contemplated increase in price before spring is given as a reason for selling dairy cattle. The California price for hay, however, is as high or higher than the Nevada price and the cattle that are being shipped out are costing the purchaser perhaps \$15 or \$20 more per head than the local farmer receives for them by the time they are landed in California with all expenses paid. In other words the California purchaser, under less favorable conditions than exist locally, is willing to pay \$15 or \$20 more for animals than the local farmers value them at. It has only been three or four years when the reverse conditions existed with reference to Truckee-Carson farmers. At that time the local farmers bought animals for about \$25 more per head than the price received by the farmers of Northern Utah and California, who sold them to be imported into this valley. It is easy to see that the local farmers have been playing a losing game in both instances.

North Platte.

The week ending December 21 was taken up with general live stock work, principally with hogs and cattle. One feeding test was started with feeding them corn and shorts in a self-feeder and alfalfa hay. There were no calls received this week to visit farms having sick hogs and but very little work was done in connection with swine.

Several farms were visited where cattle are being put on feed and some assistance was given in making up the rations. The steers are being fed alfalfa hay, beet tops, corn stover, and dry beet pulp. A few herds near to the sugar factory are being fed wet beet pulp in addition to the above. A few small bunches of cows have been put on feed during the past week, but the steers seem to be much more popular than cows.

Two farms were visited during the week where a start is being made with pure bred Holsteins. Each of the men now have four very good cows and they own an excellent yearling bull together. Two of the cows were recently purchased at a sale in Waterloo, Iowa, for the sum of \$500 each. These men have made the start in pure bred Holsteins this winter.

There is plenty of feed of all kinds on the project this year and the prices for all kinds have been very satisfactory. Alfalfa hay has dropped in price from \$18 per ton at the mill in Mitchell to \$16, but most of the farmers now seem to be in the notion of feeding their hay and buying more cattle instead of selling the hay. The Scottsbluff Creamery Company is paying 69 cents per pound for butter-fat.

Uncomphagre.

Twelve farms were visited during the week ending December 21 and calls were received from 25 sources. A part of the week was spent at the office in work on reports.

One shipment of cattle was listed and sent to market for twelve farmers. There were 24 head of "odds and ends". They were sent to Kansas City. This is the third shipment made for the farmers and there is one other ready for shipment soon.

Assistance was given in getting a shipment of hogs together at Olathe.

A meeting of the directors of the bull association was called to meet at the office, but on account of the busy season and the influenza it was not well attended.

There was one case of cholera reported during the week. The herd was vaccinated by the Montrose veterinarian. The outbreak stimulated further vaccination on other herds.

A plan is being formulated to organize a live stock association to employ a veterinarian for general practice. It is the plan to get 300 members in the association at \$12 per year and a charge of 20 cents per mile one way on calls. This plan is meeting with favor among the farmers and it is hoped to get in operation soon. The association will pay a stated salary to the veterinarian for his services. This is being worked on in cooperation with the County Agent and State Agricultural College.

Fifty-eight shoats were weighed during the week on the farm of Ralph Nash in a cooperative feeding test.

MISCELLANEOUS

W. I. A. Circular No. 25, "The Work of the Yuma Experiment Farm in 1917", and W. I. A. Circular No. 27, "The Work of the Scottsbluff Experiment Farm in 1917", have just been issued.

WEEKLY BULLETIN

Of the Office of

WESTERN IRRIGATION AGRICULTURE and DEMONSTRATIONS ON RECLAMATION PROJECTS.

Vol. XV.

JANUARY 11, 1919.

No. 2

Western Irrigation Agriculture

Field Notes.

Scottsbluff.

During the week ending January 4, the maximum temperature was 44, minimum -11, and precipitation .05 inch. The weather has been cold and the ground covered with snow since Christmas week.

One man has been hauling siloed beets and the two others have been busy with the dairy herd, feeding sheep and hogs, and hauling hay.

A carload of lambs are being fed at the station this winter. There are 11 lots of 30 lambs each. Each lot receives a different ration. The feeds used in these rations are alfalfa hay, corn, cotton seed cake, and the different bi-products of the sugar beet industry. A carload of dairy stuff and about one-half carload of hogs are also being fed.

The following table gives the results obtained by pasturing shoats on quarter-acre plats of Turkestan alfalfa and common alfalfa during the summer of 1918. The plats were divided, and the pasture supplemented by corn.

	<u>Alfalfa Pasture</u>	
	<u>Turkestan</u>	<u>Common</u>
Number of hogs.....	6	6
Total initial weight, pounds.....	382	374
Total final weight, pounds.....	893	935
Total gains made, pounds.....	511	561
Corn fed, pounds.....	1960	1892
Pounds corn per pound gain.....	3.82	3.37

Although hogs do show a decided preference for Turkestan alfalfa these results seem to show that the Turkestan does not have any higher nutritive value or greater carrying capacity than the common alfalfa. In fact the hogs on the common alfalfa made 50 pounds more gain with 68 pounds less corn than the hogs on the Turkestan alfalfa. Both plats were grazed about the same. The Turkestan does not grow so late in the fall as the common, but in the spring there is no difference in the time they begin to grow and the amount of growth.

MISCELLANEOUS

Mr. Edward G. Noble and Mr. Chas. E. Brodie, both of whom have been serving in the Aviation Service, have been released from military service and have returned to the Huntley Experiment Farm.

Demonstrations on Reclamation Projects.

Yakima.

Four calls for assistance were answered during the week ending December 7, 19 farms were visited and 7 office conferences were held. One dairy auction sale was attended.

The weather continues open and farm work is still in progress. Alfalfa prices have dropped to \$15 per ton in the stack in some instances and to \$20 and \$21 per ton baled for some sales. Ear-corn is moving at \$35 per ton to the farmer. Prime pigs are bringing \$15.75 at the local market and butter-fat in sour cream is selling at 66 cents per pound on the farm.

The Cleman dairy sale on December 6 was less successful than November sales. Although the offerings were a mixed lot, the buyers were apparently not eager to take even the best appearing cows and heifers at much above beef prices. About 50 high grade springing heifers were withdrawn from the sale when it was evident that they would not bring over \$65 each. Practically everyone has stocked up with dairy stuff for feeders for the winter and the demand is very lax.

Belle Fourche.

During the week ending December 28 conferences were held with one of the legislators, a former member of the State Live Stock Sanitary Board, relative to the promulgation of regulations to safeguard the project from the introduction of hog cholera. These regulations, from present indications, will be passed by the board and will apply primarily to the Belle Fourche Valley and the tributaries to the Belle Fourche river. As the project is splendidly isolated it is expected little difficulty will be experienced in preventing cholera gaining access to it.

Heavy snows prevented travel on the project during the week. As a result two feeding experiments had to be postponed. While the feeding will go on, the results in so far as records are concerned, will be lost, as it was impossible to get to the farms and weigh the pigs.

North Platte.

During the week ending December 28, 9 farms were visited at the request of the owners. On one farm assistance was given in making some repairs on a pit silo which had caved in on one side. Another man was assisted in planning some changes in his dairy barn and the other calls were made for general live stock work. One bunch of calves was treated for pinkeye and another vaccinated against black-leg.

The price of butter-fat here is 69 cents and some of the men who had contemplated selling their dairy cows say now that they are glad they have kept them, for they are returning a good profit for the feed they eat.

North Platte (continued).

Live stock conditions on the project are very good. Not so many sheep are being fed here as were fed last year but there are now a great many cattle in the feed lots and on the beet fields eating the beet tops. The cattle which have been put on feed here this winter look to be of a better class than were fed last year. Most of the steers on feed are two-year-olds and were bought at from 10 to 11 cents on the market. The cows were bought from 6 to 7 cents. The sheep being fed were brought from 12 to 14 cents

Uncompahgre.

Eight farm visits were made during the week ending December 28 and calls were received from 14 sources.

One day was taken up with a trip in company with a veterinarian to investigate a case of calf diptheria. Assistance was given in way of treatment. Two calves were found infected on the farm of Loesch Brothers among their registered Holsteins.

During the week ending January 4, 9 farm visits were made and calls were received from 24 sources.

On Monday of this week assistance was given one farmer in the selection of 100 head of ewes from a band of 1300. These were old ewes and were purchased for \$12 per head.

One day was given to a trip with two interested farmers in connection with the work of feeding cattle. These men were taken to farms where cattle were on feed.

A cooperative shipment of cattle and hogs was made during the week. Seventy-four head of cattle and sixty-nine head of hogs were sent out.

The coldest weather of the season was experienced on Wednesday night, the temperature dropping to 21 below zero.

W E E K L Y B U L L E T I N

Of the Offices of

WESTERN IRRIGATION AGRICULTURE And DEMONSTRATIONS ON RECLAMATION PROJECTS.

Vol. XV.

JANUARY 18, 1919

No. 3

Western Irrigation Agriculture

Field Notes.

San Antonio.

During the week ending January 4, the maximum temperature was 71, minimum 21, and the greatest daily range 35. Precipitation amounted to .38 inch with a trace on two days. The coldest weather of the season was experienced on January 3 and 4. Cold weather prevailed most of the week. Fall-seeded crops have not been injured by the cold weather.

Labor was employed in grubbing and piling brush along the Corpus Christi Road, cleaning the seed house, setting stakes on rotation plats, putting up borders on bordered plats, plowing rotation sorghum plats, cutting cotton stalks on C4, and trimming the ends of the oat plats on the rotations. One man continued to spend most of the time working up gin samples of cotton from the rotation plats.

During the week ending January 11, the maximum temperature was 61, minimum 26, and the greatest daily range 31. Precipitation amounted to .25 inch. The weather was favorable for field work during the greater part of the week. Bad weather has so delayed field work that there are still many days of plowing to be done.

Plowing of rotation plats scheduled for fall was finished and plowing of C4 was begun. Oats on rotation plats were trimmed down at the ends even with the line of stakes. Cotton stalks on C4 and part of C5 were plowed out, raked up and piled. Castor bean stalks on B4 were cut down. Manure was applied to one rotation plat, A5-5. Volunteer oats, which have been hard to destroy on some of the rotation plats were hoed out. Field C3 was harrowed and the flax varietal test and nursery rows were seeded there. Stakes were set at rotation plats on B4 and B5. Work on gin samples was continued. When the weather made field work impossible, labor was employed at odd jobs around the buildings.

MISCELLANEOUS

W. I. A. Circular No. 26, "The Work of the Umatilla Experiment Farm in 1917" was issued January 17, 1919.

Demonstrations on Reclamation Projects.

Field Notes.

North Platte.

During the week ending January 4, there was but very little field work done owing to the cold weather. The opportunity was taken at this time to get caught up on office work. Four days of the week were spent in the office in general office work and in tabulating figures on live stock shipments and the live stock census of the project.

Two farmers were assisted in castrating some calves, and two others were assisted in some general dairy work, in regard to feeding and weighing in the milk.

The live stock census shows that there is a small decrease in the number of cattle being fed here this year compared to last year and that a very much smaller number of sheep are being fed here this year than last year. There has also been a smaller number of hogs shipped from the valley this year than last and there is a smaller number of hogs on the project now than last year at this time.

Butter-fat is holding up well in price, the local buyers still paying 69 cents per pound and the dairy cow is in greater demand now than at any time during the past year. Good cows sell readily at \$150.00 per head. There is a great demand here for feeding steers, quite a few farmers not having bought and are now paying high prices. There is still a great abundance of feed of all kinds.

During the week ending January 11, 7 farm visits were made at the request of the owners, and 5 other farms were visited. Five farms were visited to inspect hogs for cholera but at none of these places was there any cholera found, in all cases but one the hogs were found to have worms. At one place the man had a drove of hogs which he had recently shipped in from the eastern part of the state. These hogs were put into a feed lot without bedding or shelter and had contracted pneumonia.

One bunch of calves were also treated this week for pneumonia. These calves had been shipped from the South Omaha market, were in a poor condition when they left there and were very poorly taken care of when they arrived here. Two of the calves died the day the place was visited but the others are doing nicely now. Blackleg was found on one farm, one of the yearlings dying with it and the others were vaccinated.

A great many potatoes were hauled during the week and shipped south for seed. The red potatoes are selling to the buyers here at \$1.60 per cwt., sacked and on track. The white potatoes are selling at \$1.25 per cwt. Some hay is being baled and shipped and some more cattle are being bought which are being fed hay and beet tops. The weather this week has been moderate and all live stock on the project are doing well.

Belle Fourche.

Heavy snows prevented travel on the project during the week ending January 4. The greater part of the week was give over to office conferences regarding the elimination of tuberculosis from dairy herds on the project and the organization of a Holstein-Fresian cattle association in the Belle Fourche valley.

The M. J. Smiley herd of pure bred Holsteins, now numbering 130 head, is, at this writing, being tested for tuberculosis by A. M. Taylor, Federal Veterinarian of the U. S. Bureau of Animal Industry. This herd is one of the best in the country and much interest is being shown in its health record.

An effort will be made in the near future to effect an organization of the breeders of pure bred and grade Holstein cattle. There are approximately 500 head of pure bred and well graded Holstein cattle in the valley.

During the week ending January 11 two hog feeding experiments were begun on two farms in the Vale district.

On the farm of J. C. Milne, 187 pigs, averaging 62.2 pounds were placed on a ration of ground barley and chopped alfalfa hay. The ground barley and alfalfa are cooked together in a large vat and fed warm. Straw is used as a fuel to heat the feed and water in the vat. Mr. Milne chops his alfalfa by running it through a silage cutter. He obtains his power by attaching a patented shaft and friction pulley device to the crank shaft of a Ford car. A governor controls the speed of the engine. The object of this feeding work is to determine the cost of carrying over this bunch of hogs until green forage is available in the spring. Two hundred pounds of ground barley a day is being fed to the 187 head. Almost a two per cent ration.

On the farm of U. S. Allison, 69 hogs, averaging 162.8 pounds were placed on a feed of ground barley in self-feeders, and alfalfa hay from the stack. The hay is fed in a rack.

One day was utilized in writing letters to a number of Holstein breeders relative to the organization of a Holstein Freisan cattle association. If sufficient interest is shown a meeting will be called shortly for organization purposes.

MISCELLANEOUS

Mr. George A. Wright of Colorado, has been appointed Agriculturist for Reclamation Project, and is expected to take up demonstration work on the Huntley Reclamation Project on February 1. Mr. Wright is a graduate of the Colorado Agricultural College.

Mr. W. E. Meyer has been appointed Agriculturist for Reclamation Project and will take up the demonstration work on the Minidoka Reclamation Project February 1. Mr. Meyer is a graduate of the University of Wisconsin and was formerly employed in the Western Office of the Dairy Division at Salt Lake City.

Of the Offices of

WESTERN IRRIGATION AGRICULTURE
And
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Vol. XV.

JANUARY 25, 1919.

No. 4

Western Irrigation Agriculture.

Field Notes.

San Antonio.

During the week ending January 18, the maximum temperature was 69, minimum 32, and the greatest daily range 29. The precipitation amounted to 1.40 inches. Most of the week was cold and damp. Only one day of plowing was possible and very little other field work was done.

Some plowing was done on Field C-4 and the cotton stalks on this field were piled. Rotation plats were weeded and the cutting down of oats and field peas at the ends of plats to the line of stakes was finished. Some palms were wrapped to prevent freezing. Part of the pomegranates were pruned. Flax was seeded in the date-of-seeding test on Field C-3. The castor bean stalks on B-4 were hauled and piled for burning. The remainder of the time was spent in cutting and hauling wood, repairing pasture fences, and odd jobs of cleaning up around the buildings and repairing.

Scottsbluff.

The weather during the week ending January 11 was very pleasant, with a maximum temperature of 56, minimum 8, and precipitation 0.

The men have been kept busy hauling hay and corn and caring for the live stock.

A time-of-thinning test with sugar beets was conducted again during the past summer. The following average yields, in tons per acre, were secured from beets thinned at different dates:

Average of 6 plats thinned on June 8,	19.26 tons
" " 6 " " " 18,	19.02 "
" " 6 " " " 28,	15.83 "

The results of a cultural test with oats and barley conducted on corn land are tabulated below, the yield being in bushels per acre:

				<u>Oats</u>	<u>Barley</u>
Average yield from	3	plowed	plats,	84.6	79.4
"	"	"	3 disked "	96.5	80.2
"	"	"	3 spring-toothed		
			plats,	93.4	75.0

Western Irrigation Agriculture (continued)

Yuma.

During the week ending December 14, the following temperatures were recorded at this station: Maximum 69, minimum 31, and the greatest daily range 38.

Most of the labor on the farm was occupied during the week at picking cotton. Leveling on Fields D-29 and D-33 was continued.

Four varieties of barley were seeded to Fields D-38 and D-41. Feterita grain was harvested from Field A-23, and miscellaneous varieties of grain sorghum from Fields B-19 and B-20.

A part of each variety plat of sweet potatoes was harvested. The remainder of each variety will be left in the ground for several weeks to test their keeping possibilities. The White Vineless variety has been found to keep quite well in past seasons when left in the dry soil through the winter months.

During the week ending December 21 the following temperatures were recorded: Maximum 72, minimum 25, and greatest daily range, 42. A precipitation measuring .03 inch occurred on December 21. Twelve acres were irrigated.

Cotton picking was continued during the week. There is a general shortage of cotton pickers felt all over the Yuma Project.

Extra help has been secured and three men were busy during the week at setting pressure gates in the irrigation system. Gravel was hauled for this work.

The decayed willow fence posts in the east farm fence line were replaced by cement posts. This completes this line fence with cement posts.

White Durra grain was harvested on Field C-31 and Fields D-11 and D-12 were plowed.

During the week ending December 28 the maximum temperature at this station was 57, the minimum 24.5, and the greatest daily range 37 degrees. A precipitation of .1 inch was recorded on December 22. No irrigation was applied this week.

The setting of irrigation gates and cotton picking were continued throughout the week. A supply of firewood was hauled and sawed. Cotton stalks were cut on borders D-13 to 26, and D-13 and 14 were plowed.

During the week ending January 4, temperatures were recorded as follows: Maximum 72, minimum 17.5, and the greatest daily range 47 degrees. The entire week registered lower temperatures than have been experienced up to this time this season, as the minimum during six nights of the week fell well below the freezing point. The minimum of 17.5 is the lowest temperature recorded since 1913, when a minimum of 16 was reached in January. Six acres were irrigated this week.

Eight varieties of flax were planted in different cultural tests on Border C-35 on December 31. Fields D-15 and D-20 were

Western Irrigation Agriculture (continued)

Yuma (continued)

plowed and the "B" orchard hoed. With the existing cool weather the winter weed growth is somewhat curtailed. Neither sour clover nor wild lettuce are yet as troublesome to the farmer as during most winters.

The cotton on hand of short-staple varieties was ginned this week.

During the week ending January 11 the following temperatures occurred at this station: Maximum 75, minimum 28, and greatest daily range 41. No irrigation was made.

The freezing weather that has recently occurred has deadened the Bermuda grass sod sufficiently to permit a thorough burning. Most of the sodded ditch banks, etc., have been burned over on the experiment farm. It seems that with rather a cool winter and this opportunity to clean up all grass and rubbish, there may be valuable improvement in the control of cotton insects which were very detrimental in certain localities on the project last year.

Work continues in setting irrigation gates. A bunk-house annex which is being built is nearly constructed and ready for painting. Most of the Durango cotton on hand was ginned this week. A hotbed was made for starting early garden plants.

Some undesirable seedling date and pomegranate plants were dug out of plantings on Fields A-25 and C-18. Date and tree plantings on C-42 to C-45 and D-42 to D-45 were hoed, and berries on A-10-6 were pruned.

The following plots were plowed in preparation for early plantings of spring garden, potatoes, and melons: A-10-5, 12-2, 15-3, and B-21. Also, borders D-21 to 26 were plowed.

A variety planting of strawberries was begun on Plot A-12-4.

Demonstrations on Reclamation Projects.

Field Notes.

Belle Fourche.

During the week ending January 18, one day was spent in conference with Mr. Hayden, the Project Manager, at Newell, relative to live stock conditions on the Belle Fourche Project.

One day was occupied with the testing of two herds of dairy cows near Newell.

Another feeding experiment is being conducted on the farm of Beyer Aune, where the hogs were weighed on Wednesday of this week. The aged sows and boars will receive third-cutting alfalfa and a one percent ration of ground barley. The pigs, which are being fed in two lots, will be fed third-cutting alfalfa and a two percent ration of ground barley. These hogs and pigs will be weighed once a month.

Twenty-five reactors have been found in six herds of Holstein cattle tested. Twenty of these were found in one pure-bred herd. Of the latter, nine will be shipped and eleven retained and segregated. Those to be retained are very valuable breeding animals and are to be retained for breeding purposes. Six farms were visited Saturday for the purpose of appraising reactors. Thirteen reactors will be shipped Friday and inspected by Federal Inspectors at Rapid City on January 25.

North Platte.

The forepart of the week ending January 18 was spent on a trip into the northwestern part of the State of Nebraska with a North Platte project farmer who wished to buy some feeding cattle for himself and another man. Two days were spent in looking at different herds of steers but none was bought. The steers were either so high in price, or so poor in quality, that buying them was out of the question.

The latter part of the week was occupied with general office work and answering four requests for assistance in the country. At two of the farms visited the owners suspected their hogs of having cholera, but no cholera was found. At the other two farms assistance was rendered in connection with dairy problems.

The weather on the North Platte project during the month so far has been ideal. There has been no snow and no cold winds and the live stock all over the project are doing much better than usual at this time of year.

A good many farmers are hauling in potatoes and shipping them east through the county potato growers' association. They are receiving \$1.60 per cwt. for the red potatoes and \$1.20 for the whites. The former are being shipped into Texas for seed.

Truckee-Carson.

Cattle feeders from the northeastern part of the State of Nevada have been shipping a large number of cattle into the Truckee-Carson project recently to be fattened for market or to be maintained through the winter, after which they will be returned to the range. Many new cattlemen are feeding in this valley this season. Some of the cattle that are brought into the valley to be wintered are very thin in flesh and considerable loss is being sustained among these herds. The loss is principally with the calves. In one lot of cattle consisting of cows with their calves, the loss was so heavy that the owner suspected an epidemic and called for an investigation. Upon examination, the dead animals and some others that were still alive showed that the cattle were dying of constipation, due, no doubt, to their weakened physical condition before being put on a straight alfalfa ration. In order to offset this difficulty, the feeders have planned to feed third-cutting alfalfa hay for a while instead of first crop, feeling that this will be more laxative and give the animals more time to recover from their emaciated condition. Similar difficulty has been reported this season from other lots of cattle shipped into this valley in a weakened condition.

There is considerable anxiety on the part of some of the owners of alfalfa hay on the project. The demand for hay is not up to expectations by considerable, and those who have been expected to buy large quantities of hay have not been very active this season. Fourteen dollars for hay in the stack has been the lowest price for which hay has been sold this season. There is considerable hay yet unsold and an organized effort is being made to further more sales.

During the week ending January 18, a cooperative shipment of one carload of hogs was sent out from Hazen, Nevada, to the Nevada Packing Company, at Reno, Nevada. Seven farmers took part in this shipment. The Reno prices were 15-1/2 cents for prime hogs; 14-3/4 cents for light hogs, and 14-3/4 cents for heavy hogs. From the time these hogs were loaded on the car until they were turned over to the packing company was seventeen hours, which makes a very satisfactory shipping time to this point.

Uncompahgre.

During the week ending January 11, ten farms were visited and calls for services and information were received from 15 sources.

A call to investigate hog sickness was received from the County Agent of Delta County on Saturday. The case was found to be cholera. Advice was given as to method of procedure in handling the outbreak.

One day was spent with a Department veterinarian on the matter of testing a registered herd of Holsteins for tuberculosis in the plan for accredited herds. There were four reactors to the test. These animals will be slaughtered and the premises cleaned-up.

W E E K L Y B U L L E T I N

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AGRICULTURAL DEVELOPMENT ON THE UNCOMPAGRE RECLAMATION PROJECT IN 1918

As Reported by Mr. H. A. Lindgren, Agriculturist.

The year 1918 was a prosperous one on the Uncompahgre Project along most agricultural lines. Peculiar weather conditions during the winter previous to the irrigation season, the first moisture falling early in January and a light snowfall in the hills, threatened to furnish a light supply of water for irrigation. Spring work was begun early, assisting greatly to overcome the shortage of labor due to the war. The rainfall during the summer kept up a liberal supply of water for irrigation so that none of the crops suffered materially.

A larger acreage of potatoes was planted, following a low price for potatoes in storage for the year before. The stand of potatoes was light and most of the crop was marketed at digging time at prices ranging from \$1.35 to \$2.25 per cwt.

The subar beet acreage was reduced by about 30 per cent under the previous year, due to labor conditions and difficulty in obtaining seed.

The wheat acreage was very much increased, and amounted to 13,000 acres as compared with 10,000 acres of the previous year. The yield was a trifle less than 27 bushels per acre.

The alfalfa acreage showed a slight increase, there being 21,859 acres as compared with 20,000 acres in 1917. The yield of alfalfa was 3.25 tons in 1918, as compared with 2.8 tons in 1917.

The acreage in corn in 1918 was 1816 acres, with an average yield of 55.9 bushels per acre. There was 555 acres of corn put into silos.

THE DAIRY INDUSTRY.

General status.--There was an increase in the number of dairy cattle on the project over 1917, due to the high price of butterfat. The herds as a rule are small, but there is a tendency toward better animals. Several importations of dairy stock were made from outside sources during the year. High prices for good animals seemed to be no object to those interested in the industry. A serious drawback

to all stock-raising on the project is the lack of good water during the winter. On a portion of the project it is possible to get Artesian wells but in other parts this is not possible, and water can not be run in the ditches in winter on account of freezing. Some of the farmers have constructed water storages of earth or concrete, but this is expensive.

Population.--The following table shows the number and distribution of dairy cattle on the project in 1917 and 1918:

	1917	1918
Total number of dairy stock,	3148	4000
No. of farms carrying dairy stock,...	328	893
Average number of cows per farm,.....	4.3	4.5
No. farms having 1 to 3 cows,.....	475	587
" " " 4 to 10 "	197	236
" " " 11 to 20 "	44	51
" " " more than 20 cows,...	12	19

The distribution of dairy stock is practically limited to the south half of the project.

One of the local banks has rendered assistance in the selection and importation of 45 Holstein cows from Arizona. The money was furnished at the regular rate of interest, and the cows were sold to the farmers at actual cost. This shipment was followed by another from the same place by a local dealer.

Breeds and breeding.--Holsteins still predominate as to breeds, and there has been little change in the numbers of registered cows since 1917. There are 50 registered Holstein producing females and 30 registered Holstein bulls on the project. There are 2 registered Guernsey bulls in use and 6 registered females. There are four registered Jersey bulls in use and no registered females of this breed. There are still a large number of cows of the Shorthorn breed on the project which are being used for milk production on the farms. These are being slowly replaced by dairy breeds.

A bull association block was formed during the year in which 20 farmers, owning from 1 to 10 cows, are interested. The bull in use has served 40 cows for the members. This bull was purchased for \$250. The shares of stock in the association are held at \$5.75. One share is purchased for each cow owned. The dam of this bull has a record of 780 pounds of fat in a year, and his sister a record of 1114 pounds in a year.

In general, the quality of the dairy cows is being improved as rapidly as limited capital and market demands will permit.

Feeds and feeding.--The foundation for all dairy feeds in this section is alfalfa hay. In the majority of cases, hay alone constitutes the dairy ration. This proves quite satisfactory, as there are very few cows that will respond to grain feeding except in the case of the heavy producers.

During the year, hay prices ranged from \$11 to \$18 per ton, which is 15 per cent higher than a year ago. Some have fed bran at

\$1.70 per cwt., but the supply of this feed was limited on account of war conditions.

Comparatively few dairy farmers on the project have enough cows to warrant building a silo for their cows alone. Where silage is fed, far better results are apparent.

The number of irrigated pastures for summer feeding is increasing. In 1918 there were 2264 acres as compared with 2240 in 1917.

Equipment.--There was slight increase in the number of barns built for milking, but the farmers do not consider that a great deal of equipment is necessary as the cows are seldom fed in the barns out are allowed free access to the feed racks in the open lots.

Diseases.--Very little trouble was experienced during the year from diseases. There were a few losses from poison milkweed, which has become scattered on farms in certain localities. Efforts have been made for the control of the spread of this weed through cooperation with the State agricultural college, farm bureaus, stock associations and other local agencies. This is being done by plowing, grubbing and mowing the territory where the weed is found. No method of complete eradication has yet been found.

Production and marketing.--The demand for dairy products during the year has assisted greatly in the marketing of dairy products. Prices for butterfat have been quite satisfactory. The creamery at Montrose made nearly 100,000 pounds of butter during 1918, as compared with 70,000 pounds in 1917. The cheese factory at Delta has also installed equipment for butter-making and has made a small amount of butter for local consumption. A milk plant and ice cream factory at Montrose has drawn on the supply of whole milk to a limited extent. The following prices for butterfat, by months, have been paid by the Montrose Creamery during the years 1917 and 1918:

	<u>1917</u>	<u>1918</u>
January,	33¢	50¢
February,	33	50
March,	35	44
April,	38	38
May,	40	41
June,	38	41
July,	33	43
August,	38	51
September,	45	57
October,	45	57
November,	45	60
December,	50	65

The price per pound of butter fat at the cheese factory has been from 6 to 8 cents higher than at the creamery. The whole milk at the ice cream factory has been bringing 25 to 27 cents per gallon. The butter has been sold at the local stores, and in the mines and adjacent towns. The cheese has been marketed in Denver. The surplus

has been marketed by the creamery largely through cream gathered and sent to the larger plants.

The cost of producing milk and butterfat has not advanced to any marked degree, and has remained practically the same as the year before. This has provided a more satisfactory profit from the dairy industry due to the advanced price of butterfat.

Relationship to other industries.--In no case on the project is dairying being made the major industry, but it is being conducted in connection with general farming and hog raising. The farmers are in favor of dairying mainly because of the regular source of monthly income. For this reason, the prospects for the future development of the industry on the project are encouraging.

Cooperation.--The cooperative features worked on during the year have been limited to the bull association work. This has covered 20 farms so far and will accommodate several others before it is completed. It is contemplated extending this association over more territory as one of the most important considerations at this time is to provide the farmers with better bulls, and this can not be accomplished until the herds are larger so that cow-testing associations can be formed.

Future development.--The dairy industry on the project will advance readily with the use of registered bulls. The growth from will come gradually as the farmers adapt themselves to the industry.

THE SWINE INDUSTRY.

General status.--Swine growing on the project is becoming more and more of a permanent industry. There is a tendency to grow only the number of hogs on the farm that can be taken care of without the purchase of outside feeds that has been quite noticeable. Regardless of the discouraging feeding problems to be met with during the year, the hog population increased materially over 1917.

Owing to the fact that wheat is considered the best yielding grain, under ordinary conditions on the project farms, it has been difficult to raise the hogs to the best advantage. Wheat regulations, due to war conditions, cut down tremendously the amount of home-grown grain available for hog-feeding. The alfalfa pasture, stubble grazing, cull potatoes, root crops, and waste products have been utilized very efficiently during the year.

Cooperative marketing has assisted still further in the advancement of the industry.

Population.--The total hog population on the project in 1917 and 1918, together with its distribution, is shown in the following table:

	1917	1918
Total swine population,	9948	12817
No. farms carrying 1 to 10 each,	472	490
" " " 11 to 20 "	112	143
" " " 21 to 50 "	93	115
" " " 51 to 100 "	19	30
" " " more than 100,	10	13

There is a further increase in the number of farms carrying hogs, although the tendency is to raise only what the farm will support without the purchase of outside feeds. The bulk of the hog crop has been, or will be, fattened for market. Attention is being given to the matter of inducing the farmers to increase the size of their swine herds.

Breeds and breeding.--Ninety per cent of the hogs on the project are of the Duroc-Jersey breed. The remainder are Berkshires and Poland Chinas. There are seven farmers breeding registered Duroc-Jersey hogs and two are breeding registered Poland Chinas. There were 1,356 brood sows on the project for 1919 as compared with 1,270 for 1918. The quality of the hogs in use has very much improved. The short, fine-boned, light-maturing hogs are being replaced, through the use of good boars, by vigorous, big-boned animals. This latter type are proving more profitable as feeders.

Assistance was given during the year in the placing of 20 good boars. The selection was from local herds and stock on exhibition at the Denver Stock Show. As many gilts as boars have been selected. The farmers generally are still breeding for two litters per year. Some question the desirability of breeding for fall litters owing to the lack of pasture. It has been found that fall litters can be cheaply raised on waste feeds from the season's crops, such as cull potatoes and stubble fields, with the addition of a little grain for finishing. Spring litters are raised cheaply on alfalfa pasture and a little grain.

Feeds and feeding.--Owing to the restrictions on wheat feeding the hog growers had a serious problem to meet during 1918, as wheat was the leading grain crop under ordinary conditions. The price for wheat and the need for the crop stimulated a heavy production. Grains such as corn and barley were not available at the local mills, so that when these grains were obtained they had to be brought from outside sources, and at such prices as to make them prohibitive. In order to relieve this situation, a petition, stating the facts regarding the local feed situation, was drawn up and submitted to the State Council of Defense, which resulted in an order permitting the feeding of low-grade wheat to hogs. This was of great assistance, and, as a result, more sows were bred for spring litters in 1919. Wheat has been procured for \$3.00 per cwt., and barley at from \$2.50 to \$3.25 when available. Corn prices ranged from \$3.25 to \$4.00 per cwt. for the corn shipped in. Locally-grown corn sold for \$2.00 on the ear since husking-time, but the supply is limited. Bran was used as

much as possible but the supply has been very limited. The price of this feed made it the most satisfactory hog feed available, the price being about \$1.70 per cwt. Alfalfa pasturing has been generally practiced where hogs are kept.

In order to assist in computing the most economical ration for fattening or growing hogs under existing conditions, five hog-feeding tests were conducted on different farms and the reports used (together with reports of previous years' tests) to determine the proper ration to use. On alfalfa pasturing conditions, tests completed during the year have shown that pork could be produced at 8 to 11 cents per pound of gain. Under dry-lot feeding it required from 12 to 16 cents, depending on conditions, to produce a pound of gain.

Equipment.--Assistance was given in the matter of self-feeders and hog houses, and as to the general arrangement of hog lots. Newspaper articles were published from time to time setting forth the need for warmer quarters for farrowing. There is still need for better housing, but, on account of the high prices for building material, it has been impossible to make much progress along this line during the year. Self-feeders are in general use for fattening hogs on the project.

Diseases.--There was considerable loss during the year among hogs from Necrotic Enteritis, about 150 hogs being lost from this disease. The farmers are advised to make a complete change of feed-lots when this disease appears.

In November, an outbreak of cholera occurred on the project and was found on 17 farms. The territory was organized and patrolmen appointed in each locality to report any case of hog sickness. Four veterinarians vaccinated 5,000 hogs in 185 herds. The disease was fairly well controlled by the end of the year and only a few small herds were infected after the main outbreak. The disease spread over a territory some 12 miles long and 5 miles wide, and 300 hogs were lost before all the herds were vaccinated. The simultaneous treatment was used in all cases. Cooperation was had from the Colorado Agricultural College, the U. S. Bureau of Animal Industry, and local veterinarians.

There has been some trouble from lice in neglected herds. This menace and its seriousness has been kept before the farmers at all times in personal interviews and newspaper articles as to treatment and methods of prevention. Crude oil has been used with best results in controlling lice.

Marketing.--The bulk of the hogs grown on the project during the year were marketed in Denver by cooperative shipping. Of the ninety-five carloads of hogs marketed from the project during the year, eighty carloads were marketed cooperatively.

Assistance was given in connection with the organization of an association at Olathe, Colorado, to handle these shipments.

A manager was selected whose duty it is to list the hogs for shipment and look after all details. This manager receives for his services 10 cents per 100 pounds, in addition to the actual shipping expenses. It is costing on an average of \$1.25 per cwt. to market hogs from the project.

A grange cooperative association has been handling the work at Montrose on a 2 per cent commission basis. This latter method has not proved satisfactory and another association will probably be formed for handling the shipments at Montrose, and also another association at Delta. There is still need for improvement along this line and considerable effort needs to be made in order to perfect a satisfactory method of handling these association shipments.

The prices for hogs, f.o.b. project points, during 1918 were as follows:

January,	\$15.00 to \$15.40
February,	15.00 to 16.10
March,	15.00 to 16.45
April,	15.00 to 16.80
May,	15.00 to 16.25
June,	15.00 to 15.30
July,	16.00 to 17.00
August,	17.50 to 18.50
September,	17.50 to 19.00
October,	15.00 to 16.25
December,	15.00 to 16.00

Relationship to other industries.--Hogs, like dairy cows, are becoming more and more a part of farming on this project. The hogs are used to gather waste products on the farm and, by the aid of a little supplement, converting it into a source of profit. The tendency is for a smaller number of hogs, better care, and the utilization of waste. With the increase in steer feeding, dairying, and corn raising, hogs will plan an important part in all farming operations. They are being found a source of great profit in connection with orcharding.

Cooperation.--Outside of the cooperative associations for shipping, and in hog cholera control, there has been a very decided cooperative movement toward the improvement of the quality of the hogs now in use on the farms. This has been stimulated by a number of excursions of a few individuals from farm to farm. It is planned to enlarge the shipping associations to one general hog growers' association to take up all general problems connected with the industry.

Future development.--It is rapidly becoming a part of every farmer's system to keep a few hogs. The ultimate aim of the industry is to encourage enough hogs on every farm to balance all feeding of waste, and no more than can be handled by the feeds grown on the farm.

THE SHEEP INDUSTRY.

General status.--There has been more or less speculation in sheep on the Uncompahgre Project during 1918, or up until the first of September, when prices began to drop with the outcome somewhat uncertain. Many sheep were bought by men unfamiliar with the business with borrowed money, with the result that they were turned out at a loss. Toward the close of the year those who were conservative decided to remain in the business and prices have been more steady. The tendency toward farm sheep raising is steadily increasing. Several purchases of purebreds were made during the year by project farmers. There is room for more sheep on the farms where they can be handled by using irrigated pastures for grazing.

Population:--There were 101 farms carrying sheep in 1918. Of this number, 51 carried 1 to 10 sheep; 12 from 11 to 20; 14 from 21 to 50, and 24 more than 50. The majority of the sheep are owned in bands of 1,000 or over. There were 21,356 sheep owned by project farmers in 1918 as compared with 34,000 in 1917.

Breeds and breeding.--The breeds of sheep carried by the sheepmen of the project are mostly Rambouillets, Hampshires, Cotswolds and Lincolns, with the largest percentage of the former. A large number of Hampshire bucks have been used to cross with the Rambouillet ewes. The lambs are large and weigh heavy when they come from the range. With the demand for wool, the Cotswolds have been crossed with the Rambouillets also. The tendency during the last year, however, is in favor of a straight Rambouillet breeding. There are two reasons for this: one is the heavier wool clip and the other is the ease in which the Rambouillets are herded under range conditions.

One farmer was assisted in locating 10 registered Rambouillet ewes and a ram. Another farmer was given assistance in the location of Cotswolds. There are only five farms on the project raising registered sheep. Four hundred purebred and registered rams were brought in from a Twin Falls, Idaho, breeder and sold out in small numbers to local sheepmen.

Feeds and feeding.--The basic ration for sheep locally is hay. The range bands, of course, are in the forest in summer and are wintered on hay, silage and beet-tops. The farm sheep are run on farm pastures.

Marketing.--The lambs are mostly sold when they come from the range in the fall, when they are shipped to the market at Kansas City and Denver and there sold on the feeder market. The

greater part of the wool, during the year, was shipped to the Government market, bringing from 50 to 65 cents per pound.

Relationship to other industries.--There is a tendency toward farm sheep raising. It is being found desirable to carry from 5 to 10 ewes on the waste pastures not utilized by hogs. This practice can well be extended on a number of the farms. The dog question and milkweed poisoning are limiting factors in the successful development of farm sheep raising under local conditions.

Future development.--There has been much inquiry regarding pure bred sheep raising under the project by inexperienced farmers. These men have been encouraged to start with grades, and if they find the industry to their liking, to eventually branch out into pure bred sheep raising. This promises to become a successful phase of the sheep raising in the valley.

THE BEEF INDUSTRY.

There was a very noticeable expansion in this industry on the project during 1918, due to favorable feeding conditions and the market outlook. As is always true here in the fall, some of the cattlemen talked of selling their cattle on account of hay prices. However, when a standard was finally set of \$12.50 per ton for hay by several large sales, the sales of cattle were reduced. The fall of 1918 was a good season for pastures.

There were 11,887 head of cattle owned on the project in 1918, as compared with 8,700 in 1917. The number of small herds is increasing and the larger herds are being gradually increased.

The Shorthorn and Hereford breeds predominate. One of the efforts put forth during the year was to encourage the purchase of good bulls. At the Denver Stock Show in January, two carloads of registered bulls were purchased by project cattlemen. During the year, three other bulls of beef breeds were selected for farmers. There are two herds of pure bred females bred for local consumption.

Silage and hay are the two principal feeds used. For hardening the cattle before shipment, barley and corn are being used. There are 1134 cattle on feed on the project at present. These will be fed for the April and May markets.

There was a loss of about 50 cattle from blackleg and 25 from milkweed poison. Some 1,000 head were vaccinated for the Hemorrhagic Septicemia by local veterinarians. The loss from

this trouble was slight. Assistance was given in obtaining vaccine for 150 head of cattle.

Kansas City and Denver are the principal markets for the project beef cattle, the bulk being sent from the range in the fall. The matter of cooperative shipments of "cuds and ends" of cattle was taken up by this office and 176 head of cattle were sent out for 40 farmers. This proved to be of great assistance to those having only a few head to market. It was found that after the expense of shipment was deducted the farmers received from \$5.00 to \$10.00 more per head than they were offered at home.

Cattle raising is more or less an industry in itself. However, where there is an acreage of alfalfa on every farm it is being found quite economical for each farmer to own a few head of range cattle. There is more interest among small owners than formerly, as shown by the urgent demand for a cattle grazing association. One limiting factor in this is the overstocking of the Uncompahgre Forest Reserve. However, as the larger herds are cut down room is gradually being made for more of the project farmers to get on with a few head.

ACTIVITIES DURING THE YEAR.

Number of farm visits made,	506
" " requests for services,	681
" " meetings held,	19
" " lectures at meetings,	10
Attendance at meetings,	740
Office conferences,	60
Herds tested for butterfat,	25
Range in price of butterfat,	38¢ to 72¢
Range in price of hogs, f.o.b. project, ...	15¢ to 19¢
Number of dairy cows imported,	70
" " bulls selected, dairy and beef,	10
Newspaper articles prepared,	49

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W E E K L Y B U L L E T I N

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AGRICULTURAL DEVELOPMENT ON THE NORTH PLATTE

RECLAMATION PROJECT IN 1918.

By George O. Unruh.

General statement.--The North Platte project now includes 1310 farm units, with an area in crop of 83,464 acres valued at \$36.35 per acre, with an average farm crop value of \$2,367. In 1917, there were 1274 farm units with an area in crop of 83,203 acres valued at \$41.92 per acre, with a farm crop value of \$2,657. Generally speaking, the crops on the entire project in 1918 were very good. There was one area in the northwest part of the project where the crops were severely damaged by a heavy hailstorm during the growing season, but this was the only hailstorm of any consequence during the year. Grasshoppers did considerable damage to the first crop of alfalfa, but through the use of poison spread along the ditch banks, most of the farmers were able to harvest a good hay crop.

Corn was exceptionally good, owing to the long growing season of 180 days; it filled well and matured long before frost. Small grains also yielded well. Sugar beets and potatoes yielded better than ever before, but difficulty was experienced in marketing the potato crop. Owing to the high prices of grain and uncertain market conditions, swine production decreased. There was an increase in the numbers of sheep, dairy cattle, fowls and bees.

As the swine industry on the project had previously received more attention and had reached a greater development than had dairying, less time was devoted to it and more attention was given to the development of the dairy industry, and efforts were made during the year to bring the two industries into closer relationship. Considerable attention was given during the year to the development of the feeding industry on the project, particularly the feeding of cattle.

Considerable attention was also given during the year to cattle and swine feeding tests and demonstrations; the treatment of contagious and infectious diseases of stock; the selection and importation of breeding stock and of feeding cattle; and to hog houses, dairy barns, silos, pastures, pig clubs, breeders' associations and live stock exhibits at the county fair. Several farmers' meetings were attended during the year where various phases of the live stock industry were discussed, and a number of articles were written for the project newspapers relative to the care and management of live-stock.

The table below shows the numbers of live stock on the project at the end of each of the last six years, not including the stock brought in for winter feeding:

Year	Dairy Cattle	Swine	Sheep	All Cattle	Horses	Fowls
1913	1326	14,286	5000	2966	3785	37,620
1914	1521	22,145	605	3190	4610	43,898
1915	2218	24,928	2254	6941	5910	46,971
1916	3046	25,123	1401	8080	6398	59,249
1917	3345	16,550	1000	9380	6800	56,015
1918	3400	15,250	3700	8500	7732	64,800

The dairy industry.-- More time has been given to the improvement of the dairy industry than to any other phase of the work this year and the results have been very gratifying. A number of men have been started in keeping milk records, with the result that out of their herds several "boarders" have been removed and sent to the feed lots and replaced with good dairy cows. The work of record keeping on milk production has also been a great help in showing the value of proper feeding and care, and has demonstrated that the good dairy cattle are worth the best of care while scrubs are not worth keeping.

Dairy cattle were solicited for the exhibit at the county fair and 38 individual entries were made of pure breeds. Only two breeds, the Holstein and Jersey, were shown. This exhibit attracted considerable attention and resulted in great benefit to the breeders exhibiting, for on the last day of the fair, the North Platte Valley Dairy Cattle Breeders Association was formed, officers were elected, a sales manager was chosen, and, before the fair closed, a few sales of good cattle were made at very satisfactory prices.

The cooperation of the Scottsbluff Creamery Company was secured in the importation of some high grade and pure bred Holstein cattle from Wisconsin early last spring. A trip was made to Wisconsin and a carload of very good cattle, consisting of one registered bull, 22 cows, and 7 calves, were brought back to the valley and sold at cost to the farmers by the creamery company. This importation and sale did more to stimulate an interest in dairying and better cattle than any other one thing that was done during the year. After this, two trips were made up into Wyoming where some good Holsteins were bought; some were imported from the eastern part of the State, some from Iowa, and another importation was made from Wisconsin.

The following figures show the number of dairy cattle that have been brought onto the project during the year.

Pure bred cows, registered,	8
Average value of these cows,	\$400.
Pure bred bulls, registered,	5
High grade cows,	109
Average value of these cows,	\$150.

The predominating breeds of dairy cattle on the project are Holsteins, Jerseys, and Shorthorns, in the order named, and the latter are gradually being replaced by one of the former breeds, in most instances, by Holsteins. There are at present eight men owning registered Holsteins and three men owning registered Jerseys. The average prices paid for the registered bulls imported was less than the prices paid for the cows because all of the bulls, with one exception, were yearlings and the cows were all matured.

Owing to the war and the high cost of building materials, not as many improvements were made in dairy buildings as would have been made otherwise. Assistance was given in the planning of two new dairy barns and the reconstruction of two others. Assistance was also given in the planning of eight silos which were built on the project this year, one of these was an above-ground concrete block silo, and the others were pit silos.

Good pastures for the summer months are scarce and this lack of pasturage is the greatest drawback to the industry at the present time. A few men have sown a mixture of tame grasses for pasture and some have sown sweet clover. For quick returns, the latter has given the best results but the stand does not last so well as the tame grasses. There are a few good tame grass pastures on the project and also a few good sweet clover pastures. It is doubtful which of these will become the more popular. All conditions, aside from the pasture shortage, have been very encouraging for dairying. Prices paid for butter fat have been high and there was an abundance of all kinds of the common dairy feeds raised.

There are now three creameries in the valley and there are one or more cream stations in every town in the valley, so there is no longer any lack of a market for dairy products. The Scottsbluff Creamery Company put in an ice cream plant last spring and supplied the towns of the valley with ice cream. This created a demand for whole milk and the company paid \$3.00 per cwt. all spring and summer for whole sweet milk. During the year, this one creamery paid out to the farmers of the valley \$70,000.00 for cream and \$10,950.00 for sweet milk. Neither of the other two creameries have made ice cream nor have they bought as much butter fat as has the Scottsbluff Creamery, but they are new in the business and are steadily increasing their business and will in all probability make ice cream during the coming summer and also handle more butter fat than they handled during the past year.

The general health of all of the dairy cattle on the project has been very good this year but occasionally some trouble is experienced with various ailments. Early last spring, during the wet season, there was more or less trouble with white scours, but in every case, after the disease was discovered, it was possible to save all of the calves which came later. Contagious abortion also caused some loss, but by culling the herds and using plenty of disinfectant, no very serious losses resulted. During the hot summer months a number of herds became infected with contagious sore mouth and a few head died, but 92 per cent of those treated

recovered. This outbreak caused more uneasiness among the dairymen than any other cattle disease. This disease was confined to the eastern part of the project. Pinkeye and blackleg caused some little loss but nothing serious and very good results were gotten where the herds were treated in time.

The swine industry.-- While swine raising continues to be a very important industry on the project, the number of swine has decreased greatly during the past two years, as compared with the number three years ago. The principal reason for this decrease is the high price of grain and the price of pork not being as high accordingly. Some of the men who marketed their hogs during the months of August and September made a fair profit on them but a great many who shipped later either marketed their hogs at a loss or just about broke even on expenses, not counting their labor. The men who lost money this year on hogs were mainly those who fed large herds and bought their grain at a high price and, in most cases, did not have sufficient alfalfa pasture.

A few men on the project have gone out of the hog business the past year, but more men have two or three brood sows who before did not have any hogs. The hog industry at the present time, while it does not show as great numbers as formerly, is more widely distributed over the project; the hogs are of better quality, and are in small herds on a large number of farms rather than in large droves on a small number of farms. The future of the hog industry on the project looks encouraging, for the majority of the farmers will now raise a few hogs each year and will feed them to a large extent on what would otherwise be waste products on the place. A good many men are milking a few cows and are raising pigs on the skimmed milk. The Duroc-Jersey is the most popular breed and there are also a large number of Poland-Chinas. Over ninety-five per cent of the hogs on the project are of one or the other of these breeds.

As is shown by the table above, at the close of 1918, there were 15,250 hogs on the project; at the close of 1917, there were 16,550, and, at the close of 1916, there were 25,123.

Six feeding demonstrations were started during the spring and summer but only three were completed. So much improvement has been made in feeding methods that there is not a great deal of interest in this subject. Practically all of the farmers on the project run their hogs on alfalfa pasture and feed from 2 to 3 per cent corn. While it was demonstrated that as the grain ration was increased more grain was required per 100 pounds gain, the extra grain fed after the pigs weighed 50 pounds put them onto the market during the latter part of August, or in September, at a much better price than the hogs brought which were marketed later.

Corn is the principal grain fed, although a large amount of barley was fed this year instead of corn because of the difference in price. Some shorts have been fed to young pigs but only to a small extent because it has been impossible to buy either bran or shorts most of the time.

The practice of hogging-down corn has grown in favor to such an extent that wherever possible the corn is hogged down instead of it being picked and hauled to them. Where the hogs can have the run of both a cornfield and an alfalfa pasture, they show remarkably good gains.

Some of the men still have the habit of buying commercial hog powders and they feed these powders in various ways but so far as has been shown there have been no very good results obtained from their use, but in four herds where powders were fed, a large number of the hogs died. There was no question but that death was caused from these powders.

The average prices of commercial hog feeds on the project during the year have been as follows:

Corn, per cwt.	\$2.90 to \$3.10.
Barley, per cwt.	2.30 to 2.50.
Shorts, per cwt.	2.50 to 2.75.
Bran, per cwt.	2.00 to 2.50.

The quality of the hogs on the project is as good as the average. Most all of the herds are either Duroc-Jerseys or Poland-Chinas and are headed by pure bred boars. There are several herds of registered Duroc-Jerseys on the project and a few herds of registered Poland-Chinas.

There has been a marked improvement in the equipment used for hog raising. A number of farms have installed watering systems, pastures have been fenced in, and a number of hog houses remodeled or new ones built.

A considerable amount of time has been given to the prevention and treatment of swine diseases. Early in the spring, due to the wet, cold weather, there were a number of herds affected with pneumonia, but there was very little loss. Most of this trouble occurred on farms which were poorly equipped with suitable hog houses and this has been an incentive for the owners to build good houses this year. Canker sore mouth also caused some loss among the small pigs this spring, and, in some herds, the loss was as high as ten per cent, but this fall there was no loss from this disease so it is hoped that it is thoroughly stamped out on these farms.

There has been some hog cholera on the project most of the year although it was worse during the summer months, but there were not as many cases this year as last. Most of the farmers are well acquainted with this disease by now and have their herds vaccinated before the disease gets much of a start. There was no hog cholera on the extreme west end of the project, a few cases between Morrill and Scotts-bluff, and the others north of Bayard and Minatare. Seventeen herds, with a total of 759 hogs, were vaccinated, the loss in these herds being 2.6 per cent.

The swine exhibit at the County Fair this year was very good. The Fair Association built a new hog barn during the summer and had it complete in fair time. It is modern in every way and was a great help in getting a good exhibit. There were 56 individual entries made. Only hogs of the same breed could be entered in any class and, in every class, there was competition.

The Pig Club work was continued on the project this year by the Extension Service of the University of Nebraska and some time was given in cooperating with the local leader in getting new members and helping them to make a good exhibit at the Fair.

The following table shows the shipments of hogs, and the prices of hogs, from the valley since January 1, 1917.

Month	1917			1918		
	No. of cars shipped	Average price per cwt	Total receipts (gross.)	No. of cars shipped	Average price per cwt	Total receipts (gross.)
Jan.	65	\$10.55	\$123,435	22	\$16.60	\$ 62,480
Feb.	64	12.11	139,607	24	16.40	70,992
Mar.	50	14.31	136,517	26	17.00	75,140
Apr.	33	15.45	91,773	27	17.00	78,030
May	30	15.61	84,294	27	16.50	75,735
June	21	15.36	57,960	20	16.00	54,400
July	34	15.10	92,298	28	17.50	83,300
Aug.	37	17.05	113,553	9	18.60	28,458
Sept.	32	18.35	105,696	20	19.00	64,600
Oct.	35	18.05	107,100	10	16.75	28,475
Nov.	42	18.00	128,520	22	16.90	63,206
Dec.	30	17.40	88,740	20	17.20	58,480
Total	473	\$1,269,493	255	\$743,296

The beef cattle industry.-- While the numbers of dairy cattle surpass the numbers of beef cattle on the project, yet the breeding of registered Herefords is of considerable importance. There are at the present time, three large herds of registered Herefords on the project and these herds supply most of the breeding animals for the range which lies to the north and south of the valley. The exhibit of Herefords at the County Fair was given the credit of being one of the best in the State.

The feeding of cattle for market is now one of the most important live stock industries on the project. During the late fall and winter, large numbers of cattle are brought in from the range, and the live stock markets, for winter feeding. All of the crops are raised that go to make up a balanced ration for fattening cattle, and a great many of the big steers that are shipped in the spring top the market. Beet growing and cattle feeding are an ideal combination, for the cattle are turned into the fields in the fall to eat the beet tops, or they are put into corrals and the tops are hauled to them. The cattle near the sugar factories are fed the wet beet pulp, along with beet tops and alfalfa hay, but, as the cost of hauling the wet pulp from the factories is prohibitive, at distances of more than five miles, dry beet pulp is substituted for the wet pulp where the cattle are more than five miles from the factories. The cost of the wet pulp at the factories is \$1.00 per ton, and this pulp contains 10 per cent of dry matter. The cost

of the dry pulp is \$27.50 per ton and contains practically no moisture so that when the cost of hauling or shipping is considered there is very little difference in the cost. According to the records kept on feeding sheep corn and dry pulp, the latter gave just about the same results as the corn.

In order to keep up the fertility of the soil where beets are grown, it is necessary to return plant food to the soil in the form of manure or by plowing under alfalfa. Farmers, therefore, who do not keep any cattle during the winter to consume the roughness on the place and to fertilize the land, are being encouraged to feed cattle during the winter, and assistance is given these men in selecting their cattle, making up their feeding rations, and arranging their feed lots. So far, the business has proved very profitable in a direct financial way, as well as improving the land, and it seems safe to say that the business of cattle feeding has come to stay on this project.

The sheep industry.-- According to the figures of the Reclamation Service, the number of breeding sheep on the farms of the project has more than trebled in the past year. At the close of 1917, there were 1,000 breeding sheep and, at the close of 1918, there were 3,700. In the northwest end of the project, sheep have, to a certain extent, replaced hogs, but on some of the farms, the number of hogs has been cut down and both sheep and hogs are kept now. There is no disease among the sheep on the project and the owners seem to be well satisfied with returns from them. Some assistance was given during the year in purchasing breeding ewes and bucks.

A great many of the men who make a practice of feeding sheep during the winter had a considerable loss this year or just about broke even, and, consequently, there will not be the number of sheep shipped into the valley this year for feeding that there were last year. The figures furnished by the Reclamation Service show that in 1917 there were 80,000 sheep on feed on the project,

and in 1918, there were 28,000. The men feeding sheep are taking a greater risk financially than those feeding cattle for the reason that cattle are fed to a very large extent on the roughness that is produced on the farm, while sheep are fed almost entirely on high priced grain that is shipped into the valley and then hauled to the farm from the railroad. Sheep feeding is not being encouraged as a general practice for the farmers here.

Numerical statement.-- The following is a general summary of the principal activities for the year 1918.

.. Requests from farmers for service,.....	328
Farm visits made,	663
Callers at office,	117
Cattle feeding demonstrations started,	5
Hog feeding demonstrations started,	6
Farmers assisted in purchasing or disposing of breeding stock,	54
Dairy cows brought onto the project,	109
Dairy bulls brought onto the project,	5
Herds of cattle treated for contagious or infectious disease,	25
No. of cattle in these herds,	523
Herds of hogs treated for disease (not cholera)	110
No. of hogs in these herds,	1181
Herds of hogs vaccinated against cholera,	17
No. of hogs in these herds,	759
Miles traveled by auto,	10,080
Miles traveled by rail,	4,700

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WEEKLY BULLETIN

Of the Offices of WESTERN IRRIGATION AGRICULTURE And DEMONSTRATIONS ON RECLAMATION PROJECTS.

Vol. XV.

February 15, 1919.

No. 7

Western Irrigation Agriculture.

Field Notes.

San Antonio.

During the two weeks ending February 1 the maximum temperature was 72, minimum 38, and greatest daily range 24. The total precipitation for the period was 2.17 inches. Cloudy weather has prevailed and there has been very little loss of moisture from evaporation. Practically no field work has been done during the period owing to the wet condition of the soil. Field work is being much delayed in the region on account of the wet weather.

Labor has been utilized in repairing and building lot fences, pruning orchards, and hauling gravel for resurfacing the roads and walks about the farm buildings.

Mr. Bryan left for Washington January 27. Mr. W. L. English of St. Louis, Missouri, Supervisor of Agriculture for the Frisco Lines, was a visitor at the farm on January 31. Mr. English was formerly director of the Oklahoma State Station and was later connected with the farm demonstration work in the Southern states.

During the week ending February 8 the maximum temperature was 71, minimum 31, and greatest daily range 30. The total precipitation was .57 inch.

Field work was started on Friday afternoon. Some rotation plats and other fields were harrowed. The farm garden was plowed. Hauling of gravel for roadways was completed. Two men spent several days in constructing a new fence about the corral. Spraying trees with lime sulphur to hold the San Jose scale in check was started on Saturday.

Miscellaneous.

Mr. Edward G. Noble has been appointed Farm Superintendent of the Yuma Experiment Farm to succeed Mr. R. E. Blair. Mr. Noble is now in Washington and will proceed to Yuma and take up the work there about March 1.

Demonstrations on Reclamation Projects.

Field Notes.

Uncompahgre.

Ten farms were visited during the week ending January 18 and calls were received from twelve sources. Two office conferences were held.

The greater part of the week was taken up with the circulation of a petition for the signature of the farmers interested in the forming of a veterinary association.

A trip was made to Denver the last of the week to attend the National Western Stock Show, and meeting of the American Livestock Association.

The greater part of the week ending January 25 was spent in Denver in attending the National Western Stock Show, meeting of the American Livestock Association, and in conference with the Bureau of Animal Industry veterinarians. Some time was given in perfecting a bill for the legislature relative to the taxation of dogs for the protection of sheep.

The stock show was well filled with entries. The Hereford cattle show was a little stronger than any other department. There was a creditable showing of Shorthorns and Angus. The carlot entries were stronger than in 1918.

There were nearly 200 dairy cattle on exhibition. The larger part of the Holsteins shown were entered in the sale on Thursday.

There were some excellent hogs shown. The Duroc-Jersey and Poland-China breeds predominated.

Three carloads of beef bulls were brought to the project for use there. One farmer from the project purchased four registered Poland-China sows and gilts. These were excellent individuals and will assist greatly in the matter of furthering the breed locally.

Five farms were visited during the week ending February 1 and 10 other conferences were held with farmers. Two farmers called at the office, and one meeting was held at Olathe.

Two lots of hogs were weighed during the week in cooperative feeding tests. There were 23 head in one lot and 21 in the other.

A conference was held with the Forest Supervisor at Delta, on one day of the week, in regard to forming a cattle and sheep grazing association. Very little encouragement was given on the matter of cattle, but there is a possible chance for a sheep grazing association. A conference was held the same

Uncompahgre (continued).

day with the County Agent of Delta County relative to forming stock shipping associations at Delta and in other parts of Delta county.

A call was received from one farmer relative to hog sickness. Two local veterinarians met with the Agriculturist of this office at the farm to look into the trouble. It was thought by the veterinarians that the trouble was due to Copperas poisoning. A sample of the liver and kidneys were sent to a laboratory for examination. No report has yet been received.

A number of farmers were met with on Saturday to ascertain the number of sheep available for a cooperative grazing association.

Butterfat prices have dropped from 69 cents to 36 cents during the last two weeks. This has had a depressing effect on the industry. No satisfactory explanation has been given for the sudden drop in price.

North Platte.

During the week ending January 25 five calls were received for assistance; three farmers called at the office, and five farms were visited. Two herds of hogs were treated for worms, one herd of calves were vaccinated against blackleg, and one hog house was planned. A registered Poland-China boar was selected for one of the farmers on the eastern end of the project.

During the week ending February 1 there were six calls received for assistance; two concerning sick hogs, one for sick cattle, and the others for feeding cattle and hogs. One hog house, large enough for 14 brood sows, was planned and started during the week. In all, 13 farms were visited during the week for general live stock work.

At the present time, a great many cars of alfalfa hay are being shipped to the various hay markets, most of it going to Kansas City. The price received there is \$32.00 per ton and the cost of shipping and baling is \$16.00 per ton. There are still a great many potatoes in the cellars here waiting to be sold but at present there seems to be no market for them. The price of butter fat has dropped from 71 to 32 cents per pound with the week.

The weather here has continued very mild this week as it has during the entire month but on Saturday evening a snow storm began and about four inches of snow fell during the night.

During the week ending February 8 six calls were received for assistance with live stock and ten farms were visited. One herd of some two hundred head of hogs were treated for pneumonia. There were about half of the hogs sick, two of them died, and most of the others are now recovered and back on feed. One

North Platte (continued).

bunch of 28 calves were vaccinated against blackleg, two of the calves had died but after being vaccinated with vaccine there was no more loss. A self-feeder was planned for one man, and two others were assisted in starting milk records on their herds of dairy cows. One day was spent in attending a meeting of the North Platte Valley Potato Growers' Association, which was held at Scottsbluff. This meeting was attended by some two hundred farmers of the valley.

There are still a great many potatoes left in the valley which are unsold and there seems to be no market for them. There is also still a large amount of alfalfa hay. Some of this hay is being baled and is selling at the stations at \$20.00 per ton. The Mitchell Milling Company at Mitchell is buying some of the hay close to town at \$15.00 to \$18.00 per ton delivered loose.

Belle Fourche.

During the week ending January 25 one day was spent in arranging details for a cooperative shipment of cattle. It was rather singular that the first shipment of this nature should consist of thirteen cattle and each one diseased. These cattle were reactors to the tuberculin test and were being consigned to Rapid City and destroyed there under Federal Inspection.

Saturday of this week was spent at Rapid City, South Dakota, observing the post mortem. Lesions of tuberculosis were found in twelve of the thirteen head. In the thirteenth, the Federal Inspector demonstrated in certain glands what were considered evidences of incipient tuberculosis. These glands were forwarded to Washington for diagnosis. Four of those infected were condemned and consigned to the grease and fertilizer tank.

Of two hundred and sixty-five head tested in this immediate vicinity, twenty-five reactors were found. Ten head, being of great breeding value, will be segregated and retained. Two others will be destroyed soon.

Of the twenty-five head reacting to the test, twenty-two were registered Holsteins, the other three being grade Holsteins. Accredited herd-testing is making a good start on the project.

One day was spent with a visiting farmer accompanied with a county agent in the selection and purchase of two pure bred Duroc-Jersey gilts.

One farmer was assisted in the purchase of a pure bred Shorthorn bull.

The week ending February 1 was spent at the South Dakota State College in conference with State and Federal Extension workers. At this meeting were the County Agents, Emergency

Belle Fourche (continued).

Agents, Home Economics Agents, Boys and Girls Clubs Leaders, the representatives of a number of Farm Bureau organizations, Extension Specialists in their various capacities and a number of officers from the States Relation Service at Washington.

The outstanding features of the meeting were the discussions on the promotion of the various farmers cooperative organizations, rural credits, county agent and home demonstration agent work, and the work of the boys' and girls' clubs.

Of the cooperative discussions, that given by W. A. McKerrow, Extension Live Stock Specialist of Minnesota, perhaps created the most interest among those assembled. Mr. McKerrow has fostered the farmers cooperative live stock marketing work for the past six years and is in position to give positive data relative thereto.

In Minnesota, the percentage of live stock marketed cooperatively has increased from a practically negligible quantity to approximately 60 per cent. Mr. McKerrow expects in five years that 95 per cent of this class of live stock will be marketed cooperatively in that State.

Cooperative marketing in Minnesota has reduced the cost of marketing 70 cents per hundred weight. Where it formerly cost the growers \$1.03 per hundred weight to get their live stock on the market, they now get it there for 33 cents per hundred weight. Mr. McKerrow advises that the manager is the most important factor in the successful operation of a cooperative association of this sort. The manager selected should be competent and should receive the full confidence of his patrons. He should not be engaged in the live stock business in any form. His compensation should be about 10 cents per hundred weight. He should be entrusted with the finances of the organization and given a free reign for the legitimate development of the shipping association volume of business. The greater the volume of business the more successful the association. Two cents per hundred weight should be set aside as a sinking fund to cover possible losses from various causes in transit from the farm to destination.

Mr. McKerrow also stated that where the cooperative shippers were discriminated against on the market, the conditions have so changed at present as to warrant the statement that the opposite is true. The commission men are glad to deal with the representatives of cooperative shipments.

Considerable interest was shown in a cooperative feeder hog marketing proposition proposed from the Belle Fourche project. Last fall, eastern +South Dakota shipped in from the central markets over 100 cars of feeder hogs. These hogs had to be doubly vaccinated against cholera. The resultant yard exposure caused many to contract other infectious diseases, which in many cases, resulted fatally. Added to the cost of vaccination, the loss was rather heavy and discouraging to many.

Belle Fourche (continued).

Thinking possibly the eastern farmer and the project farmer would both benefit from a cooperative arrangement, it was suggested that the eastern South Dakota farmers purchase direct from the farmers of the Belle Fourche Project. The eastern farmer has the corn, the project farmer has not. On the other hand, the eastern farmers do not have the feeder hogs and have the corn. An admirable opportunity for the best of cooperative effort is evident and there are no apparent reasons why such an arrangement should not work out. The project hogs are free of cholera, thus eliminating necessity for inoculation; the eastern farmer would not be paying a commission to get them; and, the western farmer could expect to market price, f.o.b. for his hogs. The eastern farmer would save expense of inoculation and the western farmer the loss from shipping to the central markets.

Several farmers, feeders of hogs, became very much interested in the proposition and from indications an opportunity of trying, it would develop next fall.

It is proposed now to organize a hog growers' association on the project to meet this possibility.

Truckee-Carson.

During the week ending February 1 there were received thirty-six calls for assistance and fourteen visits to farms were made. Considerable time has been devoted during the past week to work in connection with the community pasture in an endeavor to assist in formulating some working plan for the future operation of the ten thousand acre community pasture within the limits of the project. The year 1919 will be the first year that this territory has not been open to the public. It is now enclosed with a fence and preparations are being made for distribution water over the greater part of it.

The latest developments with regard to this community pasture point toward a local organization of water users to lease this territory for a period of five years and bond themselves for something like \$30,000.00 for payment. Other methods for operating this pasture for the benefit of the water users have been proposed, though it appears that any proposition which involves the local Reclamation Service manipulating the pasture does not meet with favor from the local office.

A recent survey of alfalfa hay for sale on the project shows approximately 10,000 tons that has not yet been sold. This is in addition to about 5,000 tons owned by the Western Meat Company that will not be fed this year. There have been reports of hay selling as low as eleven dollars in the stack.

Some dairy cattle are still changing hands and there is good demand for every dairy animal offered for sale. Prices are perhaps

Truckee-Carson (continued).

stronger than at any other time in the history of the project.

The potatoes on the project have not all been marketed and many growers with potatoes yet in storage are beginning to feel that they will be left without a market the same as last year. At digging time, potatoes were selling at from \$35. to \$40. per ton, but many growers held for higher prices. This is practically identical with the situation that prevailed the previous year.

Miscellaneous.

Following is a copy of a memorandum from the Chief of Bureau, dated February 12, 1919. All field men are requested to furnish this information when requesting termination of appointment or recommending the acceptance of resignations.

"Hereafter, when employees resign from the service of the Bureau, will you kindly ascertain in each case the reason for resignation and state same in recommending the acceptance of the resignation. When employees leave our work to accept other employment at higher rates of compensation, it is requested that information be furnished me as to what the rate is and in whose employ the person leaving is will be engaged."

OFFICE OF WESTERN IRRIGATION AGRICULTURE.

C. S. Scofield, Agriculturist in Charge.

Belle Fourche Experiment Farm, Newell, S. Dak.
Beyer Aune, Superintendent.
Huntley Experiment Farm, Huntley, Mont.
Dan Hansen, Superintendent.
San Antonio Experiment Farm, San Antonio, Texas.
C. R. Letteer, Superintendent.
A. A. Bryan, Assistant.
Scottsbluff Experiment Farm, Mitchell, Nebraska.
James A. Holden, Superintendent.
Truckee-Carson Experiment Farm, Fallon, Nev.
F. B. Headley, Superintendent.
Umatilla Experiment Farm, Hermiston, Ore.
H. K. Dean, Superintendent.
Yuma Experiment Farm, Bard, Cal.
E. G. Noble, Superintendent.
C. E. Peterson, Assistant.

OFFICE OF DEMONSTRATIONS ON RECLAMATION PROJECTS.

R. E. Blair, Agriculturist in Charge.

Huntley Project, Huntley, Mont.
Geo. A. Wright, Agriculturist.
Minidoka Project, Rupert, Idaho.
W. E. Meyer, Agriculturist.
North Platte Project, Mitchell, Nebr.
Geo. O. Unruh, Agriculturist.
Shoshone Project, Powell, Wyo.
Don G. Magruder, Agriculturist.
Truckee-Carson Project, Fallon, Nev.
L. E. Cline, Agriculturist.
Umatilla Project, Hermiston, Ore.
R. W. Allen, Agriculturist.
Uncompahgre Project, Montrose, Colo.
H. A. Lindgren, Agriculturist.
Yakima Project, North Yakima, Wash.
R. P. Bean, Agriculturist.

WEEKLY BULLETIN

Of the Offices of

WESTERN IRRIGATION AGRICULTURE And DEMONSTRATIONS ON RECLAMATION PROJECTS.

Vol. XV.

February 22, 1919.

No. 8

Western Irrigation Agriculture.

Field Notes.

Scottsbluff.

The weather during January was unusually mild. With the exception of the first two days of the month the minimum temperature was 8 above zero. From the 15th to the end of the month the maximum temperature was 58, minimum 12, and precipitation .03 inch.

The weather during the first two weeks in February was considerably rougher than during January. The maximum temperature was 53, minimum 8, and precipitation .15 inch.

The men have been busy hauling corn and hay, husking corn, and taking care of the live stock.

The lambs on feeding test are doing well. The gains made during the first 70 days are tabulated and shown below.

As the feeding of sheep and cattle is very much less than during the past years, a very large amount of hay is being shipped out of the valley. Good hay is netting the shipper about \$22. per ton f.o.b. shipping point.

The potato market still drags, a large amount of the crop still remaining in the hands of the growers.

Lamb Feeding Tests at Scottsbluff Experiment Farm.

There are 30 lambs in each lot and each lot is fed at different ration. Gains were made by lambs during the first 70 days of feeding as follows:

Lot No.	Ration per Lamb.	Initial Wt.	Final Wt.	Gains made.
7	Hay, wet pulp, and 1 lb. of corn	1585	2218	633
1	Hay, 1 lb. dry pulp; $\frac{1}{2}$ lb. cotton cake	1625	2245	620
9	Hay, beet tops, and 1 lb. of corn	1600	2155	555
10	Hay and 1 lb. of corn	1608	2050	442
5	Hay, $\frac{1}{2}$ lb. of corn and $\frac{1}{2}$ lb. dry pulp	1630	2048	418
2*	Hay and $1\frac{1}{2}$ lbs. of corn	1617	2020	403
8	Hay and 1 lb. of dry pulp	1615	1948	333
6	Hay, wet pulp, and syrup	1612	1865	253
3	Hay and beet tops	1627	1845	218
4	Hay and sugar beets	1670	1818	148
11	Hay	1592	1602	10

* Lot 2 is not on full feed yet.

Scottsbluff (continued).

All lots except Lot 2 had reached full feed at the end of the 40th day. Lot 2 had reached 1.2 pounds of corn at the end of the 61st day when they failed to clean it up. The following day these lambs ate only 0.2 pound each but the next day they took 0.7 pound and this was gradually increased until they were again cleaning up 1.2 pounds at the time of the weighing.

The lots getting hay, sugar beets, beet tops, and wet pulp were fed all they would clean up of each.

Demonstrations on Reclamation Projects.

Field Notes.

Belle Fourche.

During the week ending February 8, a number of farm visits and conferences with farmers were held relative to the organization of a hog growers' association. Enough interest was manifested to warrant calling a meeting of the growers for February 21st. Present plans call for the first meeting at Vale, the oldest part of the project. If this meeting is successful, a meeting will be called at each of the towns on the project. It is hoped the local organizations will be made into one association.

At the present time, there are 906 farms on the project, 590 of which are farmed by the owners and 316 by tenants. In checking up the owners and tenants for the past three years it is found that the number of the latter is increasing more rapidly in proportion than the number owning and farming their own farms. Perhaps some of this is due to the fact that considerable land is being bought by speculators.

Four carloads of steers are on feed in the vicinity of Belle Fourche. Two cars are being fed by the sugar company. These are being fed ground barley, dried beet pulp and alfalfa. The other farmer is feeding ground corn and alfalfa.

The greater part of the week ending February 15 was spent in gathering additional data for the annual report.

The hog feeding test being conducted on Mr. Aune's farm at the end of the first month's work showed a daily gain of $3/4$ pounds per pig per day. Three pounds of ground barley per hundredweight, skim milk and alfalfa constitute the feed. About 100 pounds of milk per day for 40 pigs is the average amount of milk being fed. These pigs are doing well.

The Holstein dairy herd of J. R. Beresford was tested Saturday of this week. Mr. Beresford has decided to purchase his own testing outfit.

North Platte.

During the week ending February 15, seven farms were visited at the request of the owners who were having some sickness among their stock, and 14 farms were visited for general live stock work. Assistance was given at one farm in planning a hog house for the care of 14 brood sows and litters, and at one other farm a large herd of hogs were tested for cholera but were found to have pneumonia. The remainder of the time was given to dairy work. Three farmers were assisted in keeping records of their herds and two were assisted in registering some of their young dairy stock. As a result of keeping milk records for the past year on one of the project farms an entire herd of 32 head of red cows has been replaced with good grade Holsteins and two pure bred Holsteins. The records of the Holstein herd is more than twice the record made by the red cows previously kept. An excellent pure bred Holstein bull is at the head of the present Holstein herd.

The present price of butter fat locally is 44 cents per pound, with good prospects for a still better price. Alfalfa hay has dropped in price to \$10 to \$12 per ton in the stack.

Shoshone.

During the week ending February 1, 4 farm visits were made, 45 office calls were received and 14 milk samples were tested.

A cooperative shipment of one car load of cattle was made, 5 men cooperating in the shipment.

A report was received on car of cattle sold in Omaha January 21. The load went through in excellent condition, the shrink being unusually light. One fat cow shrank only 5%. Cows sold for \$7.00, \$8.00, \$9.50 and \$11.00 per cwt; steers for \$7.00, \$8.50, \$10.50 and \$13.00 and bulls for \$8.50 and \$8.90. The expense was \$1.04 per cwt. not counting shrinkage. The expense was so high because one cow was killed en route and her value was charged with the expense. When the claim on her is paid the amount will be pro-rated among all the shippers according to the weight of the cattle which they shipped.

An attempt is being made to arrange for a cooperative shipment of a car of fat hogs. There are a good many farmers who have a few fat hogs which they wish to ship.

A meeting of the stockholders of the Shoshone Breeders' Association was held in the office of Mr. Magruder.

During the week ending February 8, 10 farm visits were made, 59 calls were received, 19 other conferences were held, 41 letters were written and 5 milk samples were tested, in two herds.

A cooperative shipment was made of a carload of cattle and a car of sheep to Omaha, 5 men cooperating in the shipment of cattle, and 6 men cooperating in the sheep shipment. A car of sheep be-

Shoshone (continued).

longing to 2 other men was sent with this shipment.

An arrangement was made for the shipment of a carload of stock hogs next week at 13 cents per pound, f.o.b. Powell.

Final settlement was made with those who carried insurance on the cattle which they sent to the Forest Reserve last season. The loss was heavier than was expected. The herder had agreed to stand one-third of the loss on a valuation assessed by this office, provided his total loss did not amount to more than $2\frac{1}{2}\%$ of the total value of the cattle insured. The loss was such that he paid $83\frac{1}{2}$ cents on the dollar. So the loss of cattle which were insured was a little less than 9% of the valuation. The cattle were valued at about three-fourths of their value for beef when they were delivered to the herder. Some of the men had taken out additional insurance with the Association, paying 3% of the value of the animals into this insurance fund. It had been figured that this fund would pay the two-thirds of the loss other than that which would be paid by the herder. It paid 50 cents on the dollar. A meeting has been called for next week to arrange for the herding for the next season.

Returns were received on the car of cattle shipped January 28. The cost of shipping was 83 cents per cwt., besides the shrink. A two-year old Holstein steer brought \$12.00 per cwt. Three yearling Holstein steers brought \$7.50 per cwt. A Shorthorn bull brought \$8.50 and a Hereford bull \$9.00. Four sucking calves were in the load. One died on the way, one brought \$9.00 per cwt., one \$11.00 and the other \$13.50. The cows and heifers were thin and brought \$6.15 to \$8.00.

The boiler in the creamery sprang a bad leak and it was found to be so bad that it was decided not to use the boiler any longer. A batch of cream had been pasteurized but not churned and as it was found that the Reclamation Service had an upright boiler which could be rented until a new boiler could be obtained, the cream was held and churned after this boiler was installed. The installation of this boiler cost \$60.00 and the rental is \$10.00 for the first month and \$5.00 per month thereafter. The cream was offered to two neighboring creameries by telephone but they did not want to handle it. With the market in the present condition, none of the creameries are buying any more cream than they can use.

Uncompahgre.

Five farms were visited during the week ending February 8 and 32 calls for assistance were received. Eight office conferences were held.

A sheep grazing association is about organized for the season, providing a range allotment can be secured. There will be 500 head of sheep belonging to one individual, and 500 head belonging

Uncompahgre (continued).

to small owners, making a total of 1000. There has been considerable interest shown in this and it is felt that the prospects are quite promising for a range allotment.

The Biological Survey, in cooperation with the local wool growers' association, has seven men in the field here poisoning coyotes. So far they have met with splendid success. They are working on farms where permission is given to put out poison, and on public lands. There is a great deal of interest in this work.

County Agent Nevius of Montrose County has done some excellent work in forming pest districts on the project for the purpose of fighting prairie dogs. Under this plan there will be a united effort by the land owners to get rid of the dogs.

Yakima.

Seven calls for assistance were answered during the week ending December 28, 1918. Six farms were visited and a conference was held with Mr. Heinze of the Reclamation Service at Sunnyside relative to work in that section.

The local veterinarians are reporting considerable forage poisoning among horses fed alfalfa hay grown in orchards. The practice of growing alfalfa in orchards is a comparatively new one and poisoning from this source is likewise comparatively new. The orchards, becoming older and larger, require more spray per tree or per acre with a consequent heavier application of spray on the alfalfa. The trouble is quite similar to forage poisoning in the vicinity of smelters. No trouble has been reported from feeding this hay to cows and no instances of pigs being poisoned by pasturing in orchards have come to notice. A number of horses have also been poisoned by beet-top silage. In many instances the silage has been imperfectly pitted or mold has developed by careless methods of handling. A number of men are feeding the ensiled tops successfully to cattle and at least one man claims excellent results from feeding them to sheep. Both the successful and unsuccessful instances are being observed and will be reported upon later in detail.

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Beyer Aune, Superintendent.
Huntley Experiment Farm, Huntley, Mont.
Dan Hansen, Superintendent.
San Antonio Experiment Farm, San Antonio, Texas.
C. R. Letteer, Superintendent.
A. A. Bryan, Assistant.
Scottsbluff Experiment Farm, Mitchell, Nebraska.
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W E E K L Y B U L L E T I N

Of the Offices of

WESTERN IRRIGATION AGRICULTURE And DEMONSTRATIONS ON RECLAMATION PROJECTS.

Vol. XV.

March 1, 1919.

No. 9

Western Irrigation Agriculture.

Field Notes.

San Antonio.

During the two weeks ending February 22, the maximum temperature was 86, minimum 31, and greatest daily range 36. The total precipitation was .94 inches.

Field work was possible on six days during the interval. Spraying of the orchards was completed. Fallow fields were harrowed. Plowing of field C4 was completed and a large part of field C5 was plowed. Cotton stalks were cut, raked, and burned.

The fence about the corral was completed and partly painted. When too wet for outdoor work, greenhouse work was done. Some repairs to the greenhouse were made.

Truckee-Carson.

During the week ending February 15, all trees and shrubs for general distribution were removed from the nursery fows in Field A-1 and heeled in.

The Russian oleaster hedge was trimmed and the top trimmed back so as to lower the height about 10 inches below its former height.

Treatment was given to various plats as follows: B-1, 2, 3 and 4 -- Manure 16 tons and gypsum 2 tons per acre; B-5 and 7 -- Gypsum 2 tons per acre.

Special.

Attention is again called to the fact that civil service appointments positively can not be ante-dated. All field men are cautioned against permitting anyone whose civil service appointment has been requested beginning work before the receipt of a formal appointment or of notification from the Washington office that the appointment has been made.

Demonstrations on Reclamation Projects.Field Notes.

Belle Fourche.

Wednesday of the week ending February 22 was spent in company with four farmers from Lawrence County in search of pure bred Duroc-Jersey sows for foundation herd stock. Only six sows were available. The demand for this class of stock far exceeds the supply and it is expected that a number of pure bred herds will be started this year.

Friday of this week was held at Vale to discuss the organization of a cooperative hog shipping association. The original intention was to confine the organization to hogs alone but the farmers assembled wished to organize an association taking in all classes of live stock. Accordingly Saturday of the following week was set to perfect the organization of the first cooperative live stock shipping association. Fifty farmers attended this meeting.

Some interesting data was found while checking over the crop report cards of the Reclamation Office. Of the 906 farms recorded, 590 are lived upon by the owners, and 316 are operated as tenant farms. In a number of cases owners are tenants also as adjoining farms are leased by them. Of the list of 960 farms only 428 are carrying or have any live stock upon the place.

Minidoka.

The week ending February 15 was spent at Boise attending the dairy show and establishing former connections with state and government officials. Seven calls at the office were received and 8 visits to farms were made.

There is an unusually large amount of hay on the project and from all reports prices are \$10.00 to \$12.00 per ton with small quantities moving. This one fact is sufficient to the majority of farmers that some phase of live stock farming is necessary under the new conditions.

The annual meeting of the Cassia County Farm Bureau was held at Burley recently and the county is well organized and seemingly enthusiastic over the work of the county agent. With both counties well organized there will be an opportunity for very effective work in encouraging live stock farming.

Shoshone.

During the week ending February 15, 66 office calls were received, 5 other conferences were held, 4 letters were written, 1 article was written for the local papers, and 4 milk samples were tested.

A meeting was held in this office of those interested in sending cattle to the Forest Reserve next summer. Only ten men were present. Officers were elected for another year and these officers given instructions to hire a herder. Two men have applied for the job. An article was written for the local paper on the use of the forest reserve range.

A car of stock hogs was shipped at 13 cents per pound, f.o.b. Powell, 12 men cooperating in the shipment.

The creamery has had to sell some butter at a loss. With the falling price, customers cut down orders which left some on hand which had to be sold below cost.

A cooperative shipment of a car of hogs was made to the Denver market, 18 men cooperating in the shipment. There were 60 head in the car and their total weight at Powell was about 17,200 lbs. Two other men, who each had a carload of his own, shipped at the same time.

Returns were received on the car of cattle and the two cars of sheep which were shipped last week. Steers sold for \$9.00, \$14.50 and \$15.25; cows for \$6.25, \$7.85, \$8.75 and \$10.00 and bulls for \$7.50 and \$8.65. Most of the lambs sold for \$15.50 per hundredweight though almost as many sold for \$15.60. A few lambs sold for \$10.00 and \$13.00. Two-year-old wethers sold for \$12.00 and bucks for \$8.00

North Platte.

During the week ending February 22, there were seven calls received for assistance and ten farms were visited for general live stock work. A conference was held with some of the officers of the local dairy breeders' association this week and some plans were made for the improvement of the association and some preliminary arrangements were made for exhibits and prices for the county fair to be held next fall.

Two full days were spent in general dairy work, testing samples of milk, balancing rations, etc. One bunch of cows were treated for bloat from eating potatoes and one bunch of 20 calves were vaccinated against blackleg. There has been considerable loss among the young stock on the project this winter because of blackleg and the vaccination of all cattle between the ages of six months and two years is being urged.

A sale of grade Jersey cattle was attended this week at which the cows sold at an average price of \$155. The Jerseys do not sell for as much here as the Holsteins so, judging from this sale, there is a good demand for dairy cattle. The local markets have been paying 48¢ for butterfat during the past week.

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AGRICULTURAL DEVELOPMENT ON THE TRUCKEE-CARSON

RECLAMATION PROJECT IN 1918.

By Mr. L. E. Cline.

General statement.-- The Truckee-Carson Irrigation Project has had much the same experiences, agriculturally, as have come to other agriculture communities under war conditions. The farmers have responded patriotically to the general demand for the increased productions of food stuffs but they have been greatly handicapped because of the uncertainty of ample labor, and the suspense incident to the uncertainties of market demands and prices.

Much extra effort has been put forth in increased production of farm products. There was an especially large acreage of wheat and barley planted and the yields were very encouraging. The government price that was fixed for wheat gave the farmers much confidence in the final returns. The acreage of wheat and barley combined which was 3970 acres in 1917 was increased to 6398 acres in 1918 and the yield in 1917 of 69,076 bushels was increased to 133,977 bushels in 1918. The increase in production of alfalfa while not equal to that of grain has been quite marked. There was not the general demand for increased production of animal feeds as for human foods, hence the greater increased production in grain. The alfalfa acreage of 22,501 acres in 1917 was increased to 25,267 acres in 1918. The yield of 73,162 tons of alfalfa in 1917 was increased to 78,472 tons in 1918.

The climatic conditions on the Truckee-Carson project have been perhaps the most favorable in its history. While the growing season did not open quite as favorably as normal the night temperatures during the growing season were unusually warm. The length of time between killing frosts was 147 days, which gave ample time for all crops to mature. The corn crop which amounted to approximately eighty acres matured in fine shape, and it is expected that there will be a considerable increase in corn acreage next year.

War conditions with the increased demand for food stuffs of all kinds with the consequent high prices for same have reacted very unfavorably on the live stock development of the project with the exception of hogs and sheep. There has been a material decrease in the number of cattle and poultry, as well as in the

number of farmers engaged in the production of these animals. With the beginning of the year it appeared that the swine industry would suffer the greatest set back and considerable effort was put forth to overcome this condition, and it is with some surprise that the total number of swine has been found to be an increase over that of last year and the number of farmers producing hogs has also shown an increase over last year contrary to what was anticipated.

There has been a gradual increase in settlement on the project. At the close of 1917 the Reclamation Service reported 554 water users not including Indians. At the end of 1918 this number was increased to 594.

The dairy industry.-- The dairy industry on the Truckee-Carson project has remained practically at a standstill during the year, so far as regards the number of farmers engaging in the business and the quantity of the output. The Reclamation census shows a few more farmers owning dairy cattle than last year and the number of small herds have increased, while the number of herds of twenty cows or over have been diminished by about one-half. The high prices for feed in the spring of 1918 resulted in a careful scrutinizing of dairy animals, and as a result, many animals that had been kept in dairy herds were eliminated. The very high price for beef at this time greatly facilitated the culling out of dairy herds. Throughout the year there has been much advertising of dairy stock for sale which gave the appearance of a general exodus of dairy cows from the valley. While a great many dairy animals changed hands during the year, almost no profitable dairy cows were eliminated from the dairy business. In a few instances, dairy animals were exported into other parts of the state and, in December, eight carloads of dairy cattle consisting principally of immature heifers were shipped into California. Throughout the year profitable dairy cows have sold readily at good prices. One hundred to one hundred and twenty-five dollars a head has been the prevailing price and the constant demand has been a very encouraging feature, especially toward the close of the year.

With the elimination of inferior cows from the dairy herds, the dairy men are in a much better position to appreciate the profitability of the dairy business and are sure to be more contented. When these items are taken into consideration there is reason to feel encouraged when it is considered that in spite of the rather constant elimination of dairy animals, the total number of producing animals has not been very materially decreased. Older and inferior animals have been replaced by better bred animals, that have come into production during the year. At the present time there is a large number of well bred dairy heifers on the project. These young animals are practically all sired by registered bulls of excellent breeding, the Holstein breed predominating.

The very slow movement of alfalfa hay at the close of 1918 has strengthened the interest in dairy cattle very materially. It now seems very probable that considerable hay on the project will remain unmarketed this year. About 10,000 tons remain unsold at the close

of the year, with very little prospect for further sales. This situation will serve to demonstrate to the ranchers that it is unsafe to depend on an outside market for hay year after year.

The local dairy industry has been greatly handicapped throughout the year because of marketing difficulties. At the beginning of February, 1918, the local creamery contracted its entire output of butter to the Nevada Packing Company at Reno, Nevada, this company being a Swift concern. With this arrangement, none of the butter of the local creamery was placed on the local market directly, and the creamery patrons, who had up to this time been allowed to purchase their butter at the creamery for the same price that they received for their butter fat, were obliged to purchase their butter at retail prices after it had been reshipped from Reno, Nevada. This condition caused considerable dissatisfaction among the creamery patrons. A still worse situation followed in April, when the local creamery plant was leased to the Nevada Packing Company at Reno, and that Company discontinued the operation of the creamery except as a receiving station for cream. With this new arrangement all creamery patrons were obliged to market their cream outside of the valley, thus paying express charges to Reno on cans of cream, and on the return of the manufactured butter. This extra expense of marketing added to the discouragement of the dairy-men, and until some better arrangements are made for marketing cream, the dairy development locally will be handicapped.

Exportations of dairy cattle out of the project have considerably exceeded the imports. This condition might be expected hereafter, as this valley has no doubt, more dairy animals than any other section of the state, and other sections will continue to draw on this valley for dairy stock.

The feeding practices for dairy cattle are practically the same as have prevailed in previous years. The practice of feeding alfalfa hay exclusively without limit is almost universal. There is an occasional variation for short periods on some farms where root crops and some corn fodder is grown. Pasturage is available on some farms, but this is generally of poor quality and cattle fare poorly when obliged to subsist on it. During the past year, about one thousand head of young dairy stock were pastured during the summer months on the outskirts of the project in the Carson Lake region. The territory on which these cattle ranged was badly overstocked because of a large number of range cattle using the same territory. Consequently, the dairy cattle did not do well.

There has been some increased sentiment for silo construction, and the very favorable weather conditions for the past year resulted in excellent yields of corn, which has further added to the sentiment for the use of silos.

The equipment for dairying on the project has not materially changed from last year. War prices for building materials have been largely responsible. The very mild weather conditions which prevailed throughout the year, have not made shelter imperative, which probably accounts for the lack of building operations.

It has not been possible to secure accurate data concerning the butter fat output of the valley during the year as there has been no record at the local creamery, and at least four concerns have been purchasing cream on the project during the year.

The prevalence of contagious diseases among the dairy cattle in the valley is much the same as the past year. Blackleg and anthrax are two diseases that must be constantly combatted to keep down the losses that otherwise would be disastrous to the project. Much time during the spring is given over to cooperating with the State Disease Control Board in immunizing the cattle of the valley against anthrax and blackleg. The very discouraging losses that prevailed in the earlier history of the project have been practically eliminated by constant vigilance. Contagious abortion, although still present in a number of herds, does not cause the loss that it formerly did. People are learning how to take better care of their abortion animals, and many of the animals that have aborted and become non-breeders have been sold for beef, thus eliminating much of the source of the disease.

Tuberculosis is not considered a very serious disease locally, because it is not very prevalent. When dairy herds change hands within the project, they are generally given the tuberculin test. With few exceptions the dairy herds of the valley were imported from other states and had to be tested for tuberculosis. This insured practically tuberculous-free herds to begin with. Our climatic conditions and methods of handling live stock in the valley are also conducive to good health.

The following is a comparative table showing the dairy cattle situation on the project for the past four years:

	1915	1916	1917	1918
Total number of white settlers,	502	516	554	594
Total number of dairy cattle,	2579	2537	2020	1895
Total No. of farmers having dairy cows,	413	315	364	381
Per cent of farmers having dairy cows,	82.2%	67.8%	65.7%	64.1%
No. of farmers having only 1 dairy cow,	67	90	103	92
Per cent of farmers having only 1 dairy cow, ..	13.3%	17.3%	18.5%	15.4%
Per cent of farmers having 2 to 9 dairy cows	51.9%	33.9%	33.5%	38.2%
Per cent of farmers having 10 to 20 " "	10.3%	11.6%	9.5%	8.5%
Per cent of farmers having 21 to 30 " "	4.9%	2.5%	2.8%	1.1%
Per cent of farmers having over 30 " "	1.5%	2.5%	1.08%	0.6%

The total number of young dairy stock on the project at the close of 1918 was found to be 1537.

The swine industry.-- During the year 1918, the swine industry on the Truckee-Carson project has shown some growth in spite of all the handicaps that prevailed at the close of 1917 and at the beginning of 1918. The conditions favoring hog growing this year, such

as a government fixed price and a quite general growing of barley, has no doubt been responsible for this increased interest. While there have not been quite so many large herds of hogs on the project during the year, a greater per cent of farmers have grown hogs and the total number of hogs on the project has been larger. This increase in production has taken place in spite of what promised to be a pronounced decrease in the spring. Were it not for the rapidity with which the hog population can be increased, this year's production would no doubt have been not more than half of what it was last year. Some credit might be given to efforts put forth in the spring for increased production. Under the agricultural conditions of this valley, the raising of hogs is not generally attractive. Perhaps not more than one-third of the farmers raise grain, and when grain for finishing hogs must be purchased, especially under our war conditions, along with a general lack of experience in feeding on the part of many farmers, there is little incentive for growing hogs. The hogs that have been raised and fattened for market this year have yielded a profit. However, if it had not been for the definite fixed price, very few farmers would have taken chances on feeding the high priced grain. The breeds of hogs on the project have not changed in relative importance since last year. Duroc-Jerseys, Berkshires, Chester Whites and Poland-Chinas represent the various breeds in the order of their relative importance on the project. The following table shows the status of the swine industry on the project for the past four years:

	1915	1916	1917	1918
Total number of white settlers,	502	516	554	594
Total number of hogs,	4515	6092	3117	3343
Total No. of white settlers owning hogs,	268	270	287	315
Per cent of white settlers owning hogs,	53.5%	52.5%	51.8%	53.9%
" " " " " " less than 10,	52.0%	56.0%	38.9%	39.5%
" " " " " " 10 to 20 hogs,	28.2%	21.4%	8.3%	8.9%
" " " " " " 21 to 30 hogs,	8.17%	8.48%	1.4%	2.1%
" " " " " " over 30 hogs,	11.5%	12.54%	3.06%	2.3%

The hog marketing situation on the project has not changed in the past three years. With the exception of a few large ranches which market one or two carloads apiece each year, the hogs on the project are all marketed by the cooperative method established by this office. This method has been practiced for the past three years. During 1918 ten carloads of hogs and two carloads of cattle were marketed cooperatively under the supervision of this office. Had it not been for this method of marketing it would have been next to impossible to get these hogs on the market with any dispatch or profit to the grower. Fifty people have participated in the cooperative marketing of the year. A fair market is afforded the hog growers by the 2268 people living on the farms on the project and by the three towns in the project. In addition to this outlet, shipments of dressed

hogs are made by express to several mining towns of the state. The prices received at San Francisco for hogs have ranged from $15\frac{1}{2}\phi$ in the spring of 1918 to $16\frac{1}{2}\phi$ later in the year. The average net returns to the project farmer for hogs was about \$1.25 per hundred less than these prices for spring shipments and \$1.50 per hundred less for the fall shipments after the freight rates had increased.

The general health of hogs on the project has been exceptionally good. There have been no contagious diseases that are so common in many other hog producing regions.

Poultry Growing.

Turkeys.-- The turkey growing industry reached its highest development in 1916. The prospect for increased production in 1917 was very favorable and the number of turkeys raised that year would no doubt have reached the 20,000 mark had it not been for the loss and discouragement incident to the blackhead disease, which invaded the project early in the season. The loss was so general and so serious that many of the men who have heretofore grown turkeys extensively discontinued it entirely, and although there has been practically no trouble with blackhead during 1918 the turkey crop is only about half that of last year. The difficulty in getting feed in 1917 to fatten the turkeys was an additional factor against increased production in 1918. With the disappearance of the blackhead disease and more normal conditions as regards feeds it is anticipated that there will be an increased production of turkeys during 1919.

The prices for dressed turkeys during the holidays were very favorable, 35¢ to 38¢ per pound dressed weight being the prices paid at Fallon. Practically all of the turkey crop was sold at Fallon.

The following table shows a summary of the turkey industry on the project for the past four years.

	<u>1915</u>	<u>1916</u>	<u>1917</u>	<u>1918</u>
Number of farmers growing turkeys,	197	238	221	145
Per cent of farmers owning turkeys	39.3	46.1	40.7	24.3
Total number of turkeys produced,	9,000	15,239	9,030	4,746

Chickens.-- The chicken industry on the project for the past 3 years has suffered a decline. The uncertainties of feeding conditions and the prevailing high prices of grain has necessitated very careful management in order to make poultry growing profitable. The average farmer is not willing to devote this much thought to chickens. In consequence, he is necessarily eliminated as a poultry grower. The chickens on the project are almost entirely confined to the laying breeds, White Leghorns predominating. Practically all the chickens that are raised on the project are shipped into the valley as baby chicks from Petaluma, California. If conditions seem favorable when spring opens, farmers can place orders for baby chicks with

hatcheries in Petaluma, and be in the poultry business on a large scale on very short notice. The Reclamation census report for 1916 showed 29,270 chickens, the 1917 report showed 24,056, and the 1918 report showed 20,220. The local climatic conditions are very favorable for rearing baby chicks and caring for laying hens. The egg producers, however, feel that they are at some disadvantage because they are obliged to accept California prices for their eggs minus transportation to San Francisco, and at the same time, they are obliged to buy all prepared foods at San Francisco prices plus transportation to the project. This situation, of course, is much to the disadvantage of the local egg producer when in competition with the California producers.

The sheep industry.-- The sheep industry on the project for the year 1918 has suffered along with the other livestock industries. The general tendency towards marketing crops directly has reacted unfavorably toward the sheep industry. While the total number of sheep on the project has shown an increase from 3,346 in 1917 to 3,560 in 1918, this increase in numbers has been made at the expense of the number of flocks, as 1917 showed 16.2% of the farmers having sheep while there were only 14.1% having sheep in 1918. The increase in numbers was practically all absorbed by the flocks containing over 50. The larger flocks also increased in number at the expense of the small flocks as will be seen in the table below. There have been no importations of breeding sheep into the project during the year.

There has been considerable inquiry regarding sheep management as may be seen from the number of calls for assistance which in 1917 were only 36 and increased to 96 in 1918. Had it not been for war conditions and the uncertainty of the sheep and wool industry there would no doubt have been a very material increase in sheep production on the project. The decline in sheep prices at the close of 1918 has been discouraging to beginners in the sheep industry.

The sheep on the project do not represent any very definite breeding. With the exception of a few small flocks of pure bred Shropshire and Hampshire sheep, the flocks on the project have had for their foundation western range ewes, improved by the use of Hampshire and Shropshire bucks.

My activities in connection with the sheep industry have had to do with the control of parasites, other minor ailments of animals and questions regarding general herd management.

The following is a summary of the sheep industry on the project for the past four years:

	1915	1916	1917	1918
Number of sheep on the project,	4710	5452	3346	3560
Per cent white settlers owning sheep,	15%	12.4%	16.2%	14.1%

The following table shows the way in which the sheep are distributed among the farmers for the years 1917 and 1918.

	1917	1918
Per cent of farmers having less than 10 sheep, ..	8.1%	7.7%
" " " " " 10 to 20 sheep,	2.2%	1.8%
" " " " " 21 to 30 "	2.02%	0.5%
" " " " " 31 to 50 "	1.8%	0.1%
" " " " " over 50 sheep,	2.3%	3.0%

Statement of activities.-- The activities of the Agriculturist in Demonstrations on the Truckee-Carson project have increased constantly since September, 1914, when the work was started. The number of calls for assistance, which is a fair index of the necessity of the work of Agriculturist, has increased from 1252 in 1916 to 1832 in 1918. These calls for assistance were either made in person to the office or by telephone. Communications by letter are not included in these figures. Many of these calls for assistance necessitated visits to farms for the purpose of demonstration or for the discussion of the subject. Five hundred and fifty-three visits were made to farms during the year, requests having been made for practically every visit.

The work of the Agriculturist during the year was directed chiefly toward the development of the dairy, sheep, and swine industries, with a small amount of time devoted to poultry matters. Because of the relative inexperience of the project farmers in all these industries, the work of the Agriculturist has been of considerable variety. The general subject of herd management has required most of the time. Fortunately for inexperienced dairy-men the feed practices locally are very simple, alfalfa hay without limit and without supplements being the rule.

Considerable time has been devoted during the year to work in connection with the minor ailments of the class of animals mentioned. For inexperienced farmers with live stock, many difficulties arise through mismanagement or lack of proper attention at critical times. Were it not for some one being available to advise concerning these difficulties, and discuss the methods of treatment and prevention, there would be many discouraging times for the beginner with live stock. The object of my efforts in this direction are, of course, to enable the farmer to prevent future trouble, or to appreciate the seriousness of such trouble should it be unavoidable. Although there is some difficulty at times to keep this work within bounds, I feel that it is of very great importance and it is greatly appreciated by the project settlers, and often prevents discouragements that would seriously retard the live stock development of the valley.

The selection of foundation animals has been another important

activity. While there has not been much importation of live stock during the year, there have been numerous exchanges of animals within the project, and when breeding animals are wanted, assistance in selection is invariably asked of the Agriculturist.

Some effort has been put forth in the interest of silo construction. The very unsettled conditions with reference to dairying have not favored an interest in silos. However, three new silos were erected on the project according to specifications prepared by this office.

In connection with the work in dairying considerable assistance was rendered in the organization and operation of a Grazing Association consisting principally of dairy farmers. This organization comprised fifty members, owning a total of 1500 animals. The association operated from May 1 to October 1.

One cooperative pig feeding experiment was conducted for the purpose of demonstrating the value of feeding raw potatoes as a supplement to alfalfa pasture. This experiment has been previously reported for the weekly bulletin. A cooperative experiment to demonstrate the feeding value of corn silage as a supplement to alfalfa hay for dairy cattle as compared with alfalfa hay alone was started in October and will be carried through most of the year of 1919.

The cooperative marketing of live stock has been one of the most popular activities of this office. The cooperative marketing, so far, has been confined to hogs and cattle. While the production of swine on the project is not great, it exceeds, by far, the local demands and demands for express shipments to nearby points. The hogs for the most part are owned in small lots. With the absence of a local buyer, it was almost impossible to market the animals before cooperative shipments were instituted. At the present time, by the method of cooperative shipments organized and managed by this office, the small lots of hogs are readily marketed, and the prices received represent the San Francisco quotations minus actual shipping cost.

The work in connection with the disease control on the project requires considerable time and attention. Almost none of this work is actually performed by this office, it being very largely done through the cooperation of this office with the Disease Control Board at Reno, Nevada. The first notice of disease outbreaks are usually reported to this office and applications for immunization work is quite generally handled through this office, further arrangements being made later with the Reno office.

The method of communicating matters of general interest to the farmers on the project has been very largely handled through articles contributed to the two local papers, which are almost universally read by the project farmers. Heretofore, much of this material has been sent out in the form of circular letters. During the past year, however, this method has not been found to be as effective as contributions through the newspapers, and under the war conditions of the past year, so much franked mail matter has been addressed to the farmers, that communications do not receive

the attention formerly given franked mail. The local newspapers have gladly accepted these communications and the results have been very gratifying.

A summary of my various activities may be seen in the numerical statement which follows:

Items	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Total
Anthrax vaccination		15		52	53	20	11	3					154
Abortion		1	1				2	2	1	1	2	5	15
Anemia										14	16	4	34
Blackhead in turkeys					5								5
Blackleg		1		1	6	1	3		3	10	50	9	84
Bloat		1		3	2	1	2				5	1	15
Buying cattle	2	2		3	3		5	5	3	1	4	5	33
Buying bulls		4	3			3		2			5	3	20
Buying hogs				1							4		5
Buying sheep												2	2
Barn plans		4											4
Cooperative marketing ..	53	22	74		3	13		2	7	5	40	49	272
Colic	2				3								5
Cream testing		3	3		5			6	3	2	2	2	26
Cattle feeding	1		1										2
Calf feeding		4	3			1	2	3			1	1	15
Dehorning											1		1
Difficult Parturition ...	4		5	3	3	1		2	1	2	6	2	29
Destroying lice		1		4							1	1	7
Dipping sheep		2		4					11	2			19
Distemper in colts,	5	6		6									17
Farm management,									9			1	10
Farm bureau											1	5	6
Forage poisoning,		2					22		5	2			31
Granular vaginitis	1		3										4
Herd testing		1	2	26	10	3	3	9	5	7	7	5	83
"management	22	4	16		22	16	37	32	28	25	27	30	259
Hematuria		5		1	1								7
Hemorrhagic Septicemia, ..												4	4
Hog management		4	2	2	3	6	7	2	8	5	3	6	48
Hog feeding,	2	1	3	2	8	4			6	7	1	7	41
Impaction,	6	1	6	22	2	15	25	9	16	16	6	19	143
Indigestion	1	8	2	6		1				1		5	24
Lump jaw,		1	2									1	4
Lameness,		8	2	3	7	1	8		4	3	3	2	41
Labor employment,					6	81	52	11	2	2			154

Items	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Total
Milk fever, ..	2	2		11	8	5	3	2	2	3	3	2	43
Poultry manage- ment,		3			3	3	1	11		3	1	1	26
Pink eye in cattle					1			1					2
Pastures,				16	21	18	24	18	27	19	3	15	161
Retained pla- centa,	9	2	8	4	4	2	3	2	5	7	12	2	60
Rabies,											1		1
Silo filling, Silo construct ion,								3	11	2			16
Sterility, ...	6	10	7	8	2	3	3		4	2	1	4	50
Separator trouble,									4	4		3	11
Sheep manage- ment,	5	14	9	12	1	5		11	11	6		2	76
Selling cattle							2	5	3	4	2	2	18
Turkey manage- ment,			1										1
Tuberculin testing,	1			1	1	1	1			3		4	12
Udder trouble	6	7	10	23	4	6	8	10	5	17	5	12	113
No. calls for assistance, .	114	119	125	160	139	189	159	102	147	129	156	178	1832
No. calls by telephone, ..	82	70	81	126	109	133	97	63	70	78	94	110	1113
No. office visits,	32	49	44	34	30	56	62	39	77	51	62	68	719
No. visits to farms,	24	30	37	74	60	36	45	30	55	58	60	44	553
No. articles to papers, lect- ures, or circu- lar letters,		4	3	3		2	1	1			3		17
No. miles trav- eled in govt. automobile on the project,	640	595	700	950	975	600	908	738	828	855	576	594	8957
No. days absent from project on official business, ...		2 $\frac{1}{2}$			2 $\frac{1}{2}$	6	1	5					17

OFFICE OF WESTERN IRRIGATION AGRICULTURE.

C. S. Scofield, Agriculturist in Charge.

Belle Fourche Experiment Farm, Newell, S. Dak.
Beyer Aune, Superintendent.
Huntley Experiment Farm, Huntley, Mont.
Dan Hansen, Superintendent.
San Antonio Experiment Farm, San Antonio, Texas.
C. R. Letteer, Superintendent.
A. A. Bryan, Assistant.
Scottsbluff Experiment Farm, Mitchell, Nebraska.
James A. Holden, Superintendent.
Truckee-Carson Experiment Farm, Fallon, Nev.
F. B. Headley, Superintendent.
Umatilla Experiment Farm, Hermiston, Ore.
H. K. Dean, Superintendent.
Yuma Experiment Farm, Bard, Cal.
E. G. Noble, Superintendent.
C. E. Peterson, Assistant.

OFFICE OF DEMONSTRATIONS ON RECLAMATION PROJECTS.

R. E. Blair, Agriculturist in Charge.

Belle Fourche Project, Belle Fourche, S. Dak.
E. H. Aicher, Agriculturist.
Huntley Project, Huntley, Mont.
Geo. A. Wright, Agriculturist.
Minidoka Project, Rupert, Idaho.
W. E. Meyer, Agriculturist.
North Platte Project, Mitchell, Nebr.
Geo. O. Unruh, Agriculturist.
Shoshone Project, Powell, Wyo.
Don G. Magruder, Agriculturist.
Truckee-Carson Project, Fallon, Nev.
L. E. Cline, Agriculturist.
Umatilla Project, Hermiston, Ore.
R. W. Allen, Agriculturist.
Uncompahgre Project, Montrose, Colo.
H. A. Lindgren, Agriculturist.
Yakima Project, Yakima, Wash.
R. C. Bean, Agriculturist.

WEEKLY BULLETIN

Of the Offices of

WESTERN IRRIGATION AGRICULTURE And DEMONSTRATIONS ON RECLAMATION PROJECTS.

Vol. XV.

March 15, 1919.

No. 11

Western Irrigation Agriculture.

Field Notes.

San Antonio.

During the week ending March 1, the maximum temperature was 69, minimum 26, and greatest daily range 41. The total precipitation was .05 inch. Freezing weather occurred on the morning of February 26. Many of the fruit trees were in bloom. It is expected that the fruit crop was injured appreciably.

Conditions were favorable for field work throughout the week. It was the first entire week when such was true for some time. Plats B6-13 and B6-15 were plowed and subsoiled. Plowing of field C5 was completed. Field B4 was plowed and plowing of field AB8 was started. All fallow rotation plats and other fallow fields were harrowed. Some of the orchards were double disked. Corn was seeded on the rotation plats on February 26. Corn in a variety test and wide row test was seeded on March 1. Soil samples for moisture determinations were taken on the corn and oat plats in the rotation experiments. Orchards were sprayed the second time with lime sulphur spray.

Truckee-Carson.

During the two weeks ending March 1, gypsum was applied to plats G-1 and 5 at the rate of 2400 pounds per acre.

Manure and gypsum were applied to plats Y-1, 3, 4, 6, 7 and 9, the manure at the rate of 12 loads per acre and the gypsum 1500 loads per acre.

Mr. Morrell Powell of Coalville, Utah, arrived February 19 to act as Assistant to the Superintendent.

The fruit and ornamental trees in Fields A-1 and A-2 were pruned, and the garden was plowed, leveled, and made ready for spring planting.

Demonstrations on Reclamation Projects.

Field Notes.

Belle Fourche.

Extremely cold weather during the week ending March 1 prevented travel on the project, the temperature being below zero for the greater part of the week, reaching twenty-five and thirty below the middle of the week.

A meeting of the Farm Bureau was called at Nisland Friday. Zero weather prevailed and but fifteen farmers attended. Director C. Larsen, of the South Dakota Extension Division, addressed those present on the farm bureau activities and county agent work. It was hoped at this time to complete arrangements for the employment of a county agent for Butte County. An emergency agent employed during the early part of 1918 resigned after approximately four months work. Since then the county has been without an agent.

The meeting called at Vale to perfect the organization of a cooperative live stock shipping association was postponed because of the severe weather conditions. Another will be held in the near future.

Minidoka.

Part of the week ending March 1 was spent in working on the Community Sheep Grazing Association and the remainder of the time with office calls and with silo work.

The weather during the week was bad and the roads are getting in such shape that very little travel is possible.

Mr. McPheters, forestry man, was on the project for two days to take up in detail the matter of the community sheep grazing association but decided it would be better for him to return to Hailey and come back later in March.

There is a great deal of interest in silos in the community and undoubtedly a number will be put up during the coming year. If weather conditions had permitted, between 15 and 20 men would have gone to Twin Falls on the silo excursion. The trip is now indefinitely postponed until better weather and travel conditions prevail.

North Platte.

During the week ending March 1, four calls were received for assistance, eight farms were visited, six farmers called at the office, and a conference was held with the agricultural agent for the Water Users' Association and Mr. E. F. Warner, Live Stock Specialist for the State Agricultural College.

North Platte (continued).

Three farms were visited this week to inspect hogs for cholera but in each case the hogs were found to have pneumonia. This latter disease seems to be quite common among the hogs on the project at this time, but there has been only a slight loss.

There was a heavy snowfall on Friday accompanied by a strong wind which has made the roads almost impassable.

During the week ending March 8, ten calls were received from farmers for assistance in live stock problems and fifteen farms were visited for live stock work. During the forepart of the week, a sale of dairy cattle was attended north of Minatare at which a mixed herd of cows sold at an average price of \$125.00 per head. The cows were good individuals of the Holstein and Short-horn breeds, but all were grades. One herd of some fifty head of cows was treated for contagious abortion by separating the herd and disinfecting the barn. A herd of thirty head of calves was vaccinated against blackleg. Four of the calves died in this herd before treatment but none have died since. Two herds of hogs were treated for pneumonia during the week, about thirty head in each herd, and a balanced ration was substituted for a one-sided ration for another herd of hogs. One of the farmers on the project was assisted during the week in selecting a herd of thirty-eight breeding cows and forty-five calves. These cattle were bought on the dry land in the county adjoining on the south. A conference was held on Saturday with the county agent in regard to some cooperative work to be carried on in the valley.

Shoshone.

During the week ending February 22, 57 office calls were received and 5 milk samples were tested.

The board of directors of the Shoshone Live Stock Association has employed the same herder that it had last year and under the same contract. That is, the herder takes entire charge of the cattle and furnishes salt. He charges 60 cents per head per month, except that no charge is made on bulls or on calves under six months following cows. If the owner wishes to pay 10 cents extra per head per month the herder will stand one-third of the loss, provided his total loss does not amount to more than $2\frac{1}{2}\%$ of the total value of the cattle insured.

Returns were received on the car of fat hogs shipped to Denver last week. All of the hogs were sold together and sold for \$16.90 per cwt. The shrinkage was very light, being only 600 pounds on a total weight of 17,200 pounds, which was a shrinkage of $3\frac{1}{2}\%$, or 59 cents per cwt. on the selling price. The actual expense, not counting the shrinkage, was about \$1.32 per cwt., which, with the shrinkage, made a total cost of \$1.91 per cwt. This made the hogs net \$15.00 per cwt in Powell. As the highest offer in Powell was \$14.25

Shoshone (continued).

per cwt. the farmers made \$139.00 by shipping.

The load belonging to Mr. Vall, which was sent with this load, brought \$16.75 in Denver.

Returns were received on the two loads of sheep recently shipped. Lambs sold for \$15.60, \$15.50, \$13.00 and \$10.00 per cwt; bucks for \$8.00 per cwt. and wethers for \$9.00 and \$12.00 per cwt. The expense per cwt., not counting the shrinkage, was \$1.11.

During the week ending March 1, 3 farm visits were made, 42 office calls were received.

Arrangement was made for a cooperative shipment of two cars of cattle.

A trip was made with about 75 farmers and business men to the feed yards at the Lovell Sugar Factory. At a meeting there, a short discussion was given of the place of the different kinds of live stock in the different systems of farming on the project. An article was written for the local newspapers, discussing the observations of the trip.

As all applications for permits to graze cattle on the Forest Reserve must be in by March 1, considerable attention was given to getting applications to the supervisor of the range. Applications for 502 head were sent in through this office.

Uncompahgre.

Five farms were visited during the week ending February 15 and 20 calls for services were received.

Owing to the condition of the roads, a greater part of the week was spent at the office. A meeting of the members of the Bull Association was held at the office and officers were elected for the coming year. On Saturday, a meeting was held at the Court House at Montrose for the purpose of laying plans for the completion of the organization of the veterinary association.

A horse sale was attended during the week where 65 head of horses were sold. The prices for the heavy horses were satisfactory but were low for light horses.

The price of butter fat locally has risen to 4¢ cents.

Twelve farms were visited during the week ending February 22 and calls were received from 16 sources.

Two days were spent with the Delta county agent assisting in the organization of a live stock shipping association. An organization was perfected at Hotchkiss and another was started at Delta. It is the plan to work together on the matter of stock trains to market. There is much interest in this plan.

Four carloads of hogs were shipped from Olathe during the week. There were several different owners making up this lot. They were all finished.

Uncompahgre (continued).

One day was given to the work of planning the constitution and by-laws for the veterinary association.

During the week ending March 1, eleven farms were visited and calls were received from 28 sources.

Three farm sales were attended during the week, and assistance was given one farmer in selecting a gilt.

Assistance was given in the shipping of one car of cattle cooperatively. These were sent to the Denver market.

Three meetings were attended during the week with the county agent and assistance was given in the work of forming a farm bureau.

The Montrose High School Assembly was addressed on Wednesday on the general topic of live stock.

The veterinary association was discussed with 25 farmers.

Yakima.

Five calls for assistance were answered during the week ending January 4, nine farms were visited and 15 office conferences were held. The winter continues open, live stock feeding conditions are excellent, but the roads are bad.

The initial Reclamation Service reports for the Sunnyside and Tieton Units for 1918 are as follows:

The Sunnyside:-- Horses, 6980; mules, 116; cattle, 10,930; sheep, 7853; hogs, 14,795. The 1917 value of live stock was \$1,437,193 and the 1918 valuation is \$1,649,431. There were 298 silos in 1917 and 316 in 1918. Some of the average acre-yields were: prunes, \$527.55; pears, \$297.15; hops, \$228.90; peaches, \$212.40; melons, \$200.00; potatoes, \$185.00; apples, \$177.92; small fruits, \$150.00; garden truck, \$140.00; onions, \$125.00; corn silage, \$120.00; alfalfa, \$90.00; sugar beets, \$70.00; hay, other than alfalfa, \$66.00; corn, \$58.75. The total value of Sunnyside crops was over \$8,000,000.

The Tieton.-- Horses, 1641; mules, 37; cattle, 3068; sheep, 559; and hogs, 3255. The value is \$384,572, an increase of approximately 20 per cent over that for 1917. There are now 90 silos on the Tieton. Some of the average acre-yields are: small fruits, \$218.80; garden truck, \$125.00; hops, \$180.25; onions, \$258.25; potatoes, \$130.30; beans, \$96.55; and corn silage, \$77.70. The total value of Tieton crops was \$2,303,195.

The estimated productions of the Yakima Indian Reservation, or the Wapato Unit of the Yakima Project, is \$6,000,000. The total production of the Yakima Project was, therefore, nearly sixteen and one-half million dollars.

Mr. Glasscock of the Tieton Unit has been feeding culls beans to pigs with satisfactory results. A number of farmers have reported that their pigs would not eat the beans when offered dry, cooked, or mixed with "a little" grain. Mr. Glasscock's ration is one part coconut meal, two parts wheat "mill run" feed and one part split and light beans. The beans are cooked before mixing with the other feeds.

Yakima (continued).

No definite data is obtainable in this connection but it is evident that the gains have been rapid and economical.

Six calls were answered during the week ending January 11, 19 farm visits were made, and two office conferences were held.

Recent meetings of bankers, real estate dealers, and allied professions, which serve as a barometer for the agricultural prosperity and activity of a district, indicate that Yakima valley farmers have handled considerably more money, paid more mortgages, and been more active in real estate dealings than ever in their history. The banks report from 33 to 100 per cent increase in their business. The title guarantee and abstract companies have increased their 1917 business by over 50 per cent.

The two railroad companies which operate in the valley report that 26,877 cars were required to carry produce from the valley in 1918. This produce was valued at \$29,475,000 and earned \$6,416,726 freight charges.

Four calls were answered during the week ending January 18, 13 farms were visited, and five office conferences were held. One day was spent at Kennewick attending a meeting of the county agents of Central Washington.

The county agent conference discussed the development of the Seed Growers' Association, the organization of which was undertaken during the summer and fall of 1918. It is planned to have three divisions of the Association, one each for Western, Central, and Eastern Washington, each division to have its own officers and meetings, but cooperating with the others. The State College is prepared to undertake the testing and certification of the seeds grown by members of the Association. Inasmuch as Washington farmers have had no means of promoting the home-grown seed industry, or of protecting themselves in the purchase of seed, this organization will find a definite work.

The organization of the County Farm Bureaus was also discussed in relation to each county's problems and the model form suggested by the States Relation Service. It was decided to both adopt and adapt the model form, using existing community or other organizations where practicable and by creating new organizations in unorganized territory.

Mr. Dumas, chairman of the agricultural committee of the State Bankers' Association, discussed the possible cooperation between bankers and extension men, particularly county agents. He suggested that each agent write him a letter in this regard, embodying any suggestions, criticisms or present instances, these letters to be included in a circular to be mailed to all bankers in the state. The possibility of distributing farm account books through the banks was also discussed.

Mr. Coglan, state leader of county agents, discussed the duty of extension workers in helping boys and girls to decide to continue their educations through college. The various sorts of

Yakima (continued).

propaganda used by various state and private institutions were mentioned. The outstanding feature of the discussion was that young people should be encouraged to choose the practical college training best suited to their desires and that college men and women and others of acknowledged success and standing in their communities should be helped to realize their responsibility in influencing the school children of their communities toward college training.

A number of sheep men use Kennewick as winter headquarters. These reported that the grass and weather conditions were excellent for the banis on the adjacent ranges. They expressed the desire that every means be taken to check the spread of scabies which was introduced from Oregon onto the Okanagan, Washington, Range. The State Department of Agriculture will send two inspectors into the Yakima Valley as soon as the roads become suitable for travel. These men and the federal district inspector from Walla Walla, in cooperation with the county agents of Yakima and Benton counties, and with this office, plan to inspect every band and large flock of sheep in the Valley twice before they leave for the ranges. The Forestry Department, it is understood, will require a certificate of inspection made or of dipping performed subsequent to April 15 of all sheep going on the Forest Reserves.

The scabies were introduced from Oregon by a band of sheep shipped through Portland, unloaded at Lyle on the Columbia river in southern Washington, reloaded and shipped to the Okanagan range. This band has been dipped, as have others who crossed the infected trail, and is being carefully watched, redipped, isolated, etc., to check further spread of the trouble.

Twenty-two farms were visited during the week ending January 25 and three office conferences were held. One farmers' meeting was attended. Assistance was given Dr. Martin, of the State Department of Agriculture, in inspecting 21 bands of sheep for scabies.

Under Dr. Martin's supervision, one band of 1600 sheep were dipped for scabies at Mabton. This is the band that is supposed to have brought the trouble into the Yakima Valley. The 21 bands inspected during the week were apparently free from scabies. They will all be looked over again before they go on the range.

The mild winter and warm spell during this week and last broke the price of hay to \$20.00 per ton, baled. Some hay moved at \$15.00 per ton in the stacks. The stockmen who are feeding in the Valley have practically enough for the remainder of the present feeding season, in some instances, have a surplus, and reports from Western Washington indicate that the pastures will be early there this year.

The Yakima Haygrowers' Association was organized primarily for the purpose of supplying members with market information. In 1918, they sold considerable hay direct to Western Washington dairymen. At their meeting held at Toppenish this week, attended by 37 growers from various districts of the valley, the prevailing sentiment was to continue the direct selling service and to organize more

Yakima (continued).

definitely for that purpose. It is probable that members will sign contracts supported by notes of amounts based on the acreage signed for, to market through the Association. This will do away with the difficulty which officers of the Association experienced in 1918 of having to place orders in direct competition with private buyers instead of being able to quote prospective buyers definite prices on hay definitely in their power to sell.

Eighteen farms were visited during the week ending February 1 and 12 office conferences were held. Assistance was given one man in the purchase of 10 grade Holstein cows and one day was spent with a local leader of boys' clubs, at his request.

The demand for good dairy cows is showing a gratifying increase. A considerable number of dairy cows have been marketed during the past year but a majority of these were of inferior character. Western Washington buyers, principally dealers, have formed the habit of attending the Valley sales of dairy cows and have taken some good cows to their district. A majority of the good cows offered for sale have been retained in the Valley.

By a recent canvass of the creameries and dairy products dealers, it was estimated that the dairy products which Yakima farmers sold during the year were worth \$1,383,750. This is an increase of \$48,750.00 over a figure similarly obtained for 1917. The items of the 1918 compilation are: butter, 1,080,000 pounds, \$594,000.00; 5000 pounds sour cream shipped out daily, \$365,000.00; condensed skim milk, 3,000,000 pounds, \$100,000.00; ice cream, 60,000 gallons, \$70,000.00; market milk and cream, 4,000,000 pounds, \$200,000.00; American cheese, 500 pounds daily, \$57,750.00. The average price for butter was 55 cents per pound and for cheese was 30 cents per pound.

WEEKLY BULLETIN

Of the Offices of

WESTERN IRRIGATION AGRICULTURE

And

DEMONSTRATIONS ON RECLAMATION PROJECTS

Vol. XV.

March 22, 1919.

No. 12

Western Irrigation Agriculture.

Field Notes.

San Antonio.

During the week ending March 8, the maximum temperature was 81, minimum 34, and greatest daily range 42. The total precipitation was .35 inches, which was not sufficient to interfere with field work. Weather during the week was cool and crops made slow growth. Practically all of the peach trees are in full bloom.

The plow was kept going the entire week. Field AB8, and the remainder of field C5, were plowed. The Herbst field, which is used for a breeding block for Kekchi cotton, was also plowed. Field peas and rye for green manure in the rotation experiments were plowed under. Plat B6-14 was plowed and plat B6-16 was plowed and subsoiled. Soil samples were taken on the plats to be seeded to sorghum, milo, and cotton in the rotation experiments. Disking of the orchards was completed. Some weeding was done on the rotation plats and in the orchards. Prunings from the orchards were hauled out and burned.

Mr. E. B. Brown arrived at the station on Monday and remained until Wednesday afternoon. While here, he supervised the seeding of corn in experiments for the Office of Corn Investigations.

During the week ending March 15, the maximum temperature was 76, minimum 41, and greatest daily range 25. The total precipitation was .05 inches.

Favorable weather for field work prevailed throughout the week. A portion of field A3 was plowed. Field C6 was harrowed with the spring tooth harrow. Field peas on plat A4-15 were raked and the plat plowed. All fallow rotation plats were harrowed. Drawf milo and sorghum for forage were seeded in the rotation experiments. Plat stakes on the rotation fields were reset. Considerable time was spent in leveling the farm road on the west side of field A6, which was damaged somewhat by washing. The farm roads were graded. Some weeding was done in the orchards.

A corn variety test was seeded on the Stacke-Wroten-Harrison irrigated farm west of San Antonio. Ten of the more common varieties in this region were used in the test. The same varieties were

San Antonio (continued).

used in a variety test on the station. The test will also be put on another irrigated farm near the Medina Irrigation Project.

Mr. R. S. Kirby, Assistant Pathologist in Cereal Disease Investigations, spent Monday at the station making observations on rust conditions.

Truckee-Carson.

During the week ending March 8, gypsum was applied to plats B-11 to 22 at the rate of two tons per acre. Plats Y to Y-9 were plowed. Ditches were cleaned and a part of the new irrigation boxes placed in position. The trunks of the fruit trees in A-1 and A-2 were sprayed with whitewash. Egg plants, peppers, and tomatoes were planted in the greenhouse and the hot beds were made ready for planting early the following week.

Mr. Headley made a trip to Reno Friday to arrange with Professor Frandsen for another cooperative experiment in the treatment of eel worm seed potatoes. The plan as outlined is to plant seed treated by heating in incubators for varying lengths of time and at different temperatures. The seed is to be planted both in the field and in pots in the greenhouse.

Demonstrations on Reclamation Projects:Field Notes.

Minidoka.

Road conditions and bad weather were a serious handicap to much field work during the week ending March 8.

The Farm Bureau is being reorganized and will probably continue during the coming year. Weather is proving a problem for securing a good attendance at the local meetings. Some help is being given this work as it is felt that the Farm Bureau is a good asset to the development of the live stock industry on the project.

The following data, concerning the North Side Grazing Association, is interesting and valuable:

As previously reported, the weather on the range for the year 1918 was extremely severe. It was so dry that most of the feed on the range was inaccessible. This made the purchase of hay pasture and water imperative. Conditions in the forest were such (a cold, dry summer) that the sheep were unusually hard to hold, making extra help necessary. All this, combined with the increased cost of supplies and a twenty-five per cent increase in wages, made an increase of sixty-one per cent in the cost of handling the sheep as compared with the year 1917.

On the following page, an itemized list of the expenditures is given:

Minidoka (continued).

Flocks assembled,	May 3.
Flocks disbanded,	Sept. 17.
Months on range,	4-1/2
Ewes turned out,	1210
Lambs turned out,	806
Total number of sheep on range,	2016
Total number of sheep returned,	1822
Number of sheep lost,	184
Per cent of sheep loss,	9.1
Expense of grazing land per season,	\$2250.76
Expense of one ewe per month,413
Expense of one ewe per season,	1.86
Expense per band of sheep returned,	1.23

Detailed Expenses of Above Band.

Camp supplies, including sheep salt,	\$ 422.68
Herding and camp tending,	909.15
Locating and payment of strays,	119.15
Horse and wagon expenses,	97.50
Purchase of pasture and hay on trail,	186.25
Purchase of water on trail,	33.90
Freight to and from forest across desert,	482.13

North Platte.

During the week ending March 15, there was considerable sickness among the calves and young stock on the project and a number of calls were received from farmers who were having some sickness among their stock. On two farms, dairy calves were found to have infectious white scours and, at these places, the barn was thoroughly cleaned and a liberal amount of disinfectant was used on the floors and walls. One herd of 25 calves was vaccinated with government vaccine against blackleg, another bunch of 15 head were treated for pinkeye.

A conference was held during the week with two of the officers of the Platte Valley Dairy Cattle Breeders' Association to make arrangements for the semi-annual meeting of the Association. A meeting of the officers of the County Fair Association was attended during the week and premium lists were made out for the classes in live stock to be shown at the next county fair.

Shoshone.

During the week ending March 8, 2 farm visits were made, 56 calls were received, 3 other conferences were held, 16 letters were written, and 7 milk samples were tested. A cooperative shipment of 2 cars of cattle was made, 13 farmers cooperating in the shipment.

Shoshone (continued).

A cooperative shipment of a car of stock hogs was arranged for at $13\frac{1}{2}$ cents per pound, f.o.b. Powell.

A meeting of about 50 farmers at Garland, where they are trying to build a cooperative potato storage and grain elevator, was attended at the request of those in charge, and addressed regarding the needs and methods of organization.

The Louis Distributing Company, which handled the potatoes for the project farmers last year, gave such good satisfaction that over 1300 acres have been signed up for potatoes this season. It seems likely now that storage houses will be built at Powell and Garland in which potatoes can be stored temporarily during any car shortage, so the harvesting will not be delayed. These storages will also be used for shipping potatoes in winter. The farmers can haul on nice days to the storage and the cars can be loaded from the storage at any time regardless of weather conditions. The association is handling planters, graders, and diggers, and about 5 carloads of these implements have been ordered.

Two days were spent in attendance at the Big Horn Wool Growers' Association at Cody. A very instructive program was given covering the wool business in full. The president of the state association encouraged the sheep men to expect 40-cent wool.

Truckee-Carson.

During the week ending March 1, there were received forty-two calls for assistance and thirteen visits were made to farms in response to requests.

Considerable time during the week was spent in cooperation with the State Disease Control Board in immunizing horses against strangles and cattle against blackleg. An outbreak of distemper in one part of the project has caused considerable annoyance. All the horses on seven ranches were immunized against strangles and the susceptible cattle on four ranches were vaccinated against blackleg. There has been a constant loss of young cattle from blackleg throughout the winter. So far, only herds have been vaccinated against blackleg in which losses have been sustained. In the near future, a general vaccination campaign will be put on against blackleg and anthrax. This has been found necessary in order to keep down a very heavy loss from these diseases.

During the week, one cooperative shipment of hogs was sent to Reno, Nevada. Four parties took part in the shipment and $15\frac{1}{2}$ cents was paid for prime hogs.

During the week ending March 8, there were received 36 calls for assistance and six farms were visited in response to calls for help.

Considerable time during the week has been devoted to herd testing and to arranging for the purchase of dairy bulls. Previous to

Truckee-Carson (continued).

this time, inquiries were sent out for pedigrees and prices for Holstein and Jersey bulls to twenty breeding establishments. Four Holsteins and one Jersey bull are wanted. A large number of pedigrees and descriptions are at hand now from which selections are to be made. The herds for which bulls are now wanted are quite well bred up for grade herds, and bulls backed by production of at least twenty pounds of butter fat per week are required to further improve these herds. One Jersey dairyman, who is in need of a bull, is looking for a herd sire backed by a production of not less than 600 pounds of butter fat per year, as some of his cows are now in the 500 pound class. A bull offered by an Oregon breeder backed by very high production and offered for \$500.00 will probably be selected. The very excellent breeding that is possessed by most of the bulls of this project and of others that will no doubt be imported in the near future, promise to place this valley in an enviable position as far as high butter fat production per cow is concerned.

Uncompahgre.

The entire week ending March 8 was taken up in a trip to Denver and Fort Collins. While at Denver assistance was given in the matter of marketing a carload of cattle sent to market by the Grange Cooperative Association of Montrose.

Conferences were held with Mr. Reynolds and Mr. Holmes of the Bureau of Markets at Denver.

A trip was made to the Colorado Agricultural College where a conference of county agents was in session. The greater part of the time at the college was taken up with conferences with members of the Animal Husbandry Department relative to feeding practices on the project.

Five farms were visited during the week ending March 15 and calls were received from 20 sources. Three office conferences were held.

Owing to the condition of the roads, the greater part of the week was spent at the office.

A conference was held with the Supervisor of the Uncompahgre Forest relative to the forming of cattle and sheep grazing associations.

One case of hog sickness was investigated during the week. The owner suspected cholera but no symptoms of this disease were detected.

Some time was taken up with plans for a shipment of dairy cattle in the near future. There seems to be sufficient interest to make an importation feasible.

The veterinarian for the Livestock Health Protection Association began work during the week.

The measurement of silage for silo owners has been called for

Uncompahgre (continued).

during the winter. Two silos were measured during the week. The Nebraska rule has been used for this. The silos were all purchased under the King table of capacities. It has been found in this state that King's estimates are about 10 per cent high. The silo owners are often very much dissatisfied with the figures given. If any of the other field men in this office have had experience along this line their findings will be of value. A few of the men under the Uncompahgre project have weighed their silage and find that King's estimates are too high.

Yakima.

Five calls for assistance were offered during the week, 23 farms were visited, and six office conferences were held. In cooperation with Dr. Martin of the State Department of Agriculture, nine bands of sheep were inspected for scabies. Four farms were visited to observe the feeding of beet-top silage during the week ending February 8.

No scabies were found in the bands inspected this week but two of them were very lousy and in poor condition. The suggestion of annual dipping in cooperatively-owned dipping plants is meeting with considerable favor. Only one of the Yakima range-sheep men follows this practice but his experience is very favorable to it.

Horses are dying quite rapidly from poisoning by moldy beet-top and corn silage and by alfalfa grown in orchards. The mold appears to possess a special virulence during this warm and damp weather. Some of the orchardists are considering removing the alfalfa from their orchards and growing legumes which can be threshed instead of the hay crops.

One call for assistance was answered during the week ending February 15, 31 farms were visited, and nine office conferences were held. One day was spent with a corn and pig club leader in visiting the homes of club members. Three days were spent in visiting representative dairymen in regard to cow-testing association work.

At the request of some of the parents, club leaders and club members, this office has considered more active participation in the pig club work. There are now several very active and well-established pig clubs in the valley and some of the members are situated and equipped to carry on a very good business. The suggestion was made to the local county club leader that with his assistance and cooperation, one or two club members be chosen in each of the leading clubs to carry on life-long pig feeding demonstrations under the direction of this office. These members must have at least one litter of pigs, must be equipped with suitable pasture, and, if possible, with pea or corn crops to be hogged off. They must be the sort of boys who expect to be in the pig business for several years and their parents must be good cooperators.

Numerous requests have come into this office and to the office

Yakima (continued).

of the county agent for cow testing work. Since the death of the Sunnyside and Ahtanum-Wide Hollow Cow Testing Associations there has been no cow testing in the Yakima Valley. The association-size herds are not as numerous as they were prior to 1918, due to decreases in herd sizes, dispersals and culling. The three days of this week spent in visiting men whose herds would be essential to the operation of cow testing associations in their districts did not lend much encouragement to the reorganization of the work.

Two calls for assistance were received during the week ending February 22, 17 farms were visited, and 12 conferences were held. Three bands of sheep were inspected, in cooperation with Dr. Martin, for scabies. One hog house plan was selected from the blue prints in the office of Mr. Ewing. Upon invitation, seven farms in an orchard district at Zillah were visited for the first time and live stock problems were discussed.

The reorganization of cow testing association work was discussed with 14 farmers during the week. All of these men have herds under the size required by testing associations and they are widely scattered. Eleven of them desire to undertake testing if it can be arranged.

The Seattle strike situation and the mild weather have checked the demand for Yakima alfalfa to some extent. The demand seemed to revive during this week and No. 1 hay was offered at \$23.00, f.o.b. valley shipping points. The Bureau of Markets Hay and Feed Marketing Service at Spokane reported mixed mill feed offered there at \$44.00 per ton with some at \$42.00 and \$43.00. At the same time, alfalfa meal was offered at \$40.00 per ton.

The butter market seems to have steadied and has begun to regain its price. The Seattle market sets the price for the Northwest. Yakima creameries have paid two cents under the Seattle quotation for butter fat in cream delivered at the creameries and four cents under for butter fat collected on the routes. The Seattle price for butter fat has been five cents over the price paid to creameries for "Washington creamery extras". During the latter part of January, the creamery men assembled at Seattle, revised the method of fixing the price for butter fat and placed it at two cents over the "creamery extra" price. Prices to be paid in other districts of the Northwest were based on this price, less shipping costs. The shipping deduction for Yakima is two cents per pound, hence, the Yakima price to farmers on the routes is now two cents less than the Seattle quotation, or the same as the creamery price for "creamery extras". It is possible that this action will place the Northwest cream market on a more desirable basis both for creameries and for producers for it will obviate some of the necessity for the "close" practices which some creameries seem to have practiced and which may have been responsible for a portion of the great dissatisfaction among dairymen. Some of the dairymen expect the decrease to effect their returns less than the change in price would indicate. This dissatisfaction with the market has been one of the greatest obstacles in the promotion of the dairy industry in this valley and anything

Yakima (continued).

which offers some alleviation is welcomed.

The Seattle butter fat quotations were 68 cents during November, 70 cents during December, 72 cents until January 23, when the price basis change dropped it to 69 cents. The market dropped it to 66 cents on the 25th, to 62 on the 28th, and to 59 on the 29th. On February 1st, it rose to 50 cents, on the 15th to 53 cents, and on the 21st, to 55 cents. The drop of 22 cents per pound occurred in eleven days. Market men say that this was due to panicky selling by dealers who had large storage stocks.

Six calls for assistance were answered, 16 farms were visited, and 3 office conferences were held during the week ending March 1. One day was spent at Toppenish attending the first "Yakima Farmers' Conference". Four bands of sheep were inspected, in cooperation with Dr. Martin, for scabies. Thirteen farmers were questioned in regard to their desire for cow testing work.

The Yakima Farmers' Conference was called at Toppenish at the instigation of a number of farmers and the county agent. The attendance was 147. The meeting was typical of many farmers' meetings in that a multitude of resolutions were offered aiming to better the farmers' conditions. Most of these were passed enthusiastically and the attention was so thoroughly directed to the resolutions that practically nothing of a definite character was accomplished. The three outstanding features of the conference appeared to be a very successful lunch, passing the resolutions, and deciding to meet again on March 25th. The meeting on the 25th will be an attempt on the part of the county agent, a few conservative and representative farmers, and this office to begin the organization of a county farm bureau. Aside from the value of the farm bureau organization as a working medium between the farms and extension field men, it should be valuable in that it may possibly interest the successful and straight-thinking farmers of the Valley in a greater participation in community and county farm problems. This is the great need of our local farmers' organizations and meetings and apparently must be secured before the meetings can be raised to the desirable efficiency. At the present time, too many take the form of expressions of dissatisfaction instead of actual working conferences. This will probably continue to be true until the men who conduct their farms in a business-like and modern manner realize their obligation to participate in directing the sentiment and affairs of their profession. These men are busy men and do not care to spend their time as the day was spent at Toppenish on February 25th.

The butter fat market gained from 53 to 55 cents on the 24th and to 60 cents on the 27th, Seattle, making the present local price 58 cents per pound to farmers on the routes. Wheat middlings appeared on the local market for the first time since the milling regulations went into effect and are quoted at \$52.00 per ton.

Seven calls for assistance were answered during the week ending March 8, 12 farms were visited, and 18 conferences were held.

Yakima (continued).

A number of farmers who intend to grow field peas for hogging off purposes pooled their orders for pea seed through this office and that of the county agent. The total pool was for 5700 pounds and it is estimated that at least 2000 pounds more will be required. The local seedsmen were selling the seed for nine cents per pound and one of them bid for the pooled order at five and one-half cents per pound. Inasmuch as the bid price was less than the farmers could have secured the seed for by buying direct from Spokane county growers, on account of the local freight rate on less than a car lot, the order was placed with the local firm.

Several of the range bands of sheep have begun lambing and most of these report excellent results to date. Several of the bands were wintered on insufficient feed and their losses of both ewes and lambs are a strong argument for the more generous feeding practices adopted by a majority of the owners. Two bands have begun shearing and are paying 20 cents per head for the work. The weather and moisture conditions are ideal for good and early grass.

There is a good demand in the entire valley for farms for rent and for sale. On the Tieton particularly the non-resident land-owners have been very active and successful in selling their farms. Prices are good for both fruit and general farm land and the demand appears to be greater than the supply. Some of this demand is due to returning soldiers, but only a small part of it. The banks and mortgage and loan companies report the greatest liquidation of farm mortgages they have ever experienced. While some of this may be due to federal farm loans, the greater part of the money is undoubtedly due to the "good year" for fruit and other cash crops.

Twenty-three farms were visited during the week ending March 15 and six office conferences were held. Two days were spent in visiting dairymen in regard to the cow testing association work and four days were spent in the office.

Farm work, which has been carried on intermittently during the whole winter, is now in full progress on the Sunnyside and Wapato Units of the project. The Tieton is one or two weeks later and a few of the fields are just beginning to be worked. The demand for good dairy cows continues to be moderate, a few new herds starting up and a few of the old ones increasing in size. Three dispersals of pure bred herds are advertised for April and with the present demand a great many of the animals in these sales should stay in the valley. There is a good demand for brood sows and also for weanling pigs, principally of Duroc-Jersey blood.

A few farmers are buying small lots of ewes, mostly of the poorer type, which are costing from \$5.00 to \$8.00 per head. Good ewes are worth from \$15.00 to \$20.00 and not many of these are changing hands.

WEEKLY BULLETIN

Of the Offices of

WESTERN IRRIGATION AGRICULTURE And DEMONSTRATIONS ON RECLAMATION PROJECTS

Vol. XV

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No. 13

Western Irrigation Agriculture.

Field Notes.

Truckee-Carson.

During the week ending March 15, the following varieties of wheat were planted in triplicate in plats 1 and 2: Marquis, Defiance, Bluestem, Dicklow, Little Club, Sonora, Rieti and Early Baart. The area of each variety plat is about .02 acre.

Wheat was planted in rotation plats E 3, 4, 5 and 6. Plats 1 to 9 were disked. Gypsum was applied to plats B 11 to 22 inclusive. Some of the irrigation ditches were cleaned and boxes were placed in plats H 5, 6, 7, 11, 12, 13 and 14. Leveling was done on plats H 14 and 15 where the barley varieties are to be planted.

Tomatoes, cabbage varieties, kohlrabi and cauliflower were planted in the hot beds.

Demonstrations on Reclamation Projects.

Field Notes.

Belle Fourche.

The need for organization of the wool growers in this district is very apparent. Many farmers have become dissatisfied with wool prices offered by the local buyers and men representing Eastern wool houses. The handling of the wool by the Government last year has caused many of them to wonder why they had not received more for their wool in the past, even allowing for the difference in price of wool. Wool buyers have been found to be working on a margin from 5¢ to 15¢ per pound. Frequently a difference of 5¢ per pound in bids on the same sample exists. Where such differences exist between so-called expert graders representing Eastern houses, the farmers are beginning to ask and wonder what margin really does exist in the prices paid for their wool and

Belle Fourche (continued).

what it actually is worth. That they have not been receiving what their wool is worth is apparent to the growers. They are dissatisfied and quite justly so. Interest is increasing in the cooperative marketing of wool and if sufficient interest is shown the growers will be called in session and the organization of a cooperative marketing association discussed.

Three conferences with sheep men were held during the first part of the week ending March 8 regarding this proposed association. The interest is as keen with the big shippers as with the small ones.

Complaints regarding the handling of stock at Long Pine being so general, it was deemed advisable to travel with a few cars of live stock from the project to Omaha and take notes on the conditions of handling while in transit.

Accordingly, Mr. Aicher left Belle Fourche, March 6 in company with two live stock feeders who were consigning five cars of sheep and one car of hogs. Mr. Aicher assumed charge of the hogs. This was necessary in order to travel in the caboose or ride on the freight trains. Of the five cars of sheep, three were fat ewes and two were unfinished fed lambs.

The trip was made the greater part of the way in hard riding cabooses. Delays in making up trains after arrival at the different divisions varied from one to six hours. A wreck delayed the train approximately 10 hours on the first lap. The carelessness of a freight conductor when leaving Chadron, Nebraska, with his train, in failing to notify the shippers when he was ready to depart, prevented the shippers from experiencing a wreck. The train the shippers missed, and for which the conductor received no little abuse, was ditched. When this information was received the shippers were rather thankful the conductor was careless. However, word was soon received that the stock cars had not left the track.

Fifty hours were consumed in running the 352 miles from Belle Fourche to Long Pine and until the stock was unloaded at the feed yards at Long Pine. The train reached Long Pine, without the shippers, at 9:30 P.M. The cars were not placed at the feed pens until 3:30 A.M. the next morning. The stock was not unloaded from the cars until 8 A.M. and was not fed until 9 A.M., showing a very inefficient method of handling at this point. The stock was again loaded at Long Pine at 11:10 A.M. and the train departed for Fremont, Nebraska, at 11:55 A.M.

There is much room for improvement of the feeding yards at Long Pine. The yards are not equipped with drainage facilities. The troughs do not have overflow pipes. As a result overflow water runs into the pens. When the weather is cold the stock must travel over ice. When warmer the stock must travel in mud. The arrangement of the water troughs makes it imperative, for the stock in getting into the yards, to travel either over ice or through deep mud, according as the weather is cold or warm. Also in order to get water the stock must go on ice or through mud. This is not conducive to a proper fill at these yards. The yards are not protected from the heavy snows

Belle Fourche (continued).

that sweep over this section of Nebraska. A properly placed drift fence would prevent much snow from being blown into the feed yards. Alfalfa hay cannot be bought at the Long Pine yards. Train loads of baled alfalfa pass through these yards, yet none is available for feeding purposes. Why the yard authorities do not purchase alfalfa is not known. Sheep that are accustomed to alfalfa do not relish tough slough grass.

The trip to Fremont, Nebraska, was made without incident. The stock at this point was carried immediately to the yards upon arrival and were unloaded within an hour after arrival at Fremont. Service at this feeding station is under private control, while that at Long Pine is run by the Railroad Company. At Fremont any kind of feed desired is available. The authorities are prompt and cater to the wishes of the live stock men.

The live stock was held at Fremont from 4:30 A.M. Sunday until 8 P.M. Monday. This gave ample time for rest and feed. The first day is generally utilized in resting. A light feed is given. The second day the stock develops a good appetite and a good fill is given. Live stock men who stop two days at Fremont all say they are well paid for their feed. The stock goes to market active and full of life. Invariably the stock sells better. This stock was loaded at 8 P.M. Monday and was on the Tuesday morning market at Omaha.

The fat ewes, which averaged 131 pounds at Belle Fourche when put in the cars, averaged 120 pounds at Omaha. They sold at \$13.00 per hundred weight, the top for the day.

The lambs were not weighed before loading at Belle Fourche, hence the shrinkage is not known. They averaged 79 pounds on the market, and sold for \$18.05 per hundred. These lambs were not fat enough for the packers. They were bought by a feeder out from Chicago. This feeder stated he expected to shear them before returning them to market. He expects to feed them perhaps two months.

The car of hogs sold at \$17.50 per hundred weight. There were 68 hogs in the lot. They totaled 16,160 pounds at the first loading point and when sold totaled 16,170 pounds. They gained 10 pounds in transit. Their average weight at Omaha was 237 pounds.

Information from as many stock shippers as is possible is being gathered in an effort to correct conditions at Long Pine. Practically all the shippers are interested in this movement. They are rendering every aid possible. When sufficient evidence is at hand and it is determined whether the Government will operate the railroads, or whether private companies will be allowed to do so, the writer expects to place the evidence against Long Pine before the proper officials and if possible effect an improvement in conditions there.

Friday of this week was spent in testing the herd of Holstein cattle belonging to J. R. Beresford near Newell. This testing was done in order that he might have a record on his grade cows which have been offered for sale. This farmer will dispose of all of his

Belle Fourche (continued).

grade cattle. Another farmer breeding Holstein cattle near Nisland, and Mr. Beresford will hold a joint sale of grade Holsteins next week. Each is disposing of the grades and is entering strictly into pure-bred Holstein breeding.

A conference with seven farmers was held at Vale arranging date for meeting to organize the cooperative shipping association proposed for this district. Saturday of next week was decided upon as the day of organization.

A cooperative live stock shipping association and wool pooling association was perfected at Vale Saturday of the week ending March 22. It is expected similar organizations will be perfected at other project towns in a short time. This is the beginning of what is hoped will produce eventually the Belle Fourche Valley Shipping Association. The farmers at this meeting were enthusiastic and were the representative farmers of the community. A membership campaign will be instituted shortly to increase the number to one hundred. This association will handle all cooperative shipments of live stock and the wool clip of 1919.

An agricultural instructor under the Smith-Hughes Bill has been added to the teaching force of the Belle Fourche High School.

Two weighings of hogs on feeding test were made during the week. There were 190 head in one and 40 in the other. The results will not be available until the hogs are marketed this fall.

Three requests for information on the extermination of prairie dogs were received during the week. Samples of poison bait were given each citizen. A concerted effort at this time would do much to eliminate this pest from this section of the country.

Shoshone.

During the week ending March 15, fifty-five office calls were received, 4 other conferences were held and 3 milk samples were tested.

Shipment of a carload of stock hogs was made at $13\frac{1}{2}$ cents per pound, f.o.b. Powell, 22 men cooperating in the shipment. The car contained 142 hogs weighing 16,010 pounds.

The annual meeting of stockholders of the cooperative creamery was attended. Only six stockholders were present, but as the advertising had been properly done, the by-laws allowed the few to do business. The term of two of the directors expired this year, and they were re-elected. No other business was done.

A meeting of the directors of the creamery was attended. As the manager-buttermaker had resigned, to take effect April 1, another man was elected. Arrangements were also made for piping city water into the building. The books having been audited for the year ending March 1, showed a profit of \$500.00 for the year.

A newspaper article on cow pastures was prepared. Grass seed is being ordered cooperatively again this year, the first shipment having arrived.

Shoshone (continued).

Returns were received on a car of cattle shipped last week. Cows sold for \$5.50, \$6.00, \$6.60, \$7.50 and \$9.50 per cwt. Steers sold for \$7.75, \$9.00, \$10.00 and \$11.00. Bulls sold for \$6.00 and \$8.00.

Arrangements were made for a cooperative shipment of a car of cattle next week.

Truckee-Carson.

During the week ending March 15, there were thirty-eight calls for assistance and thirty-one visits were made to farmers upon request.

The situation as regards distemper in work horses on the project remains about the same and is proving to be a very serious handicap to the progress of the spring work. The requests for immunization against distemper are growing. This office cooperated with the State Disease Control Service in vaccinating horses on fifteen farms last week. It is hoped that this immunization work will soon have the distemper outbreak under control.

The outlook for the building of silos on the project this summer is very favorable. During the week an article was contributed to the local paper on silos and silage. This will be followed by a number of other articles on the subject in an endeavor to stimulate further interest in silo construction. The two farmers, who built and filled plastered silos of a new type last year, seem to be well pleased with the outcome. These two silos were constructed half height and will be extended this year and sufficient crops will be planted to fill them.

Uncompahgre.

During the week ending March 22, twelve farm visits were made and calls were received from 18 sources.

A part of the week was spent in working on a proposed importation of dairy cows some time in the near future. The outlook at present is favorable to the bringing in of one carload.

Two local farmers were assisted in the location and selection of registered Guernseys. Five heifers and cows were wanted; one has been ordered and the other four will be taken if the health certificate is clean. These are all in Colorado. There has been considerable rain during the week, so that a part of the time was spent at the office.

The price of butterfat at the local creamery is 62¢ at the end of the week.

There has been considerable Hemorrhagic Septicemia among cattle during the last month. Some losses have occurred. The farmers are now vaccinating against it.

WEEKLY BULLETIN

Of the Offices of

WESTERN IRRIGATION AGRICULTURE
and
DEMONSTRATIONS ON RECLAMATION PROJECTS

Vol. XV

April 5, 1919.

No. 14

SPECIAL NOTICE.

Under date of February 27, Secretary Lane, of the Department of the Interior, announced that hereafter the reclamation project in Nevada now known as the Truckee-Carson project will be known as the NEWLANDS PROJECT in commemoration of the late Senator Francis G. Newlands who was the father of the reclamation law.

Hereafter, the Truckee-Carson Experiment Farm will be known as the Newlands Reclamation Project Experiment Farm. As soon as the stock on hand of stationery, etc. becomes exhausted, new supplies should be ordered showing the new name.

This change in name affects the field men of both offices.

Normal Crop Yields in the Irrigated Rotations.

The irrigated rotations at the three field stations in the Northern Great Plains have been carried on for 7 years. With but one exception, the same kinds of crops are included in these 3 sets of rotations, though not generally same varieties. These experiments have now run long enough to justify a summary of the average yields obtained, and such a summary is given herewith in tabular form. The probable error of the mean yields is obtained by Merriman's formula (36). The station normals will, of course, be subject to correction from year to year. It is expected that they will be chiefly useful as a basis for comparing the value of the different rotations at each station.---C.S.S.

Crop Yields - Irrigated Rotations, Belle Fourche, 1912-1918.

Crop	# Plat Years	Mean	Maximum	Minimum
Beets.....	122	9.5±.2	20.9	2.9
Oats.....	148	64. ±1.5	118.	24.
Potatoes.....	104	124.±3.2	236.	8.
Corn.....	45	37.4±1.0	54.	13.
Wheat.....	62	21.7 ±.2	44.	6.
Flax.....	26	14.±0.9	24.	3.7
Barley.....	13	27.6±2.5	63.	12.
Alfalfa.....	148	3.0±.07	5.8	0.7
1st year alfalfa...	56	1.9±.008	4.8	0.7
2nd year and older alfalfa.	92	3.7±	5.8	2.3

Crop Yields - Irrigated Rotations, Scottsbluff, 1912-1918.

Beets.....	98	15.0±.26	23.8	4.9
Oats.....	126	66. ±1.7	118.	9.0
Potatoes.....	91	211.±6.1	403.	14.
Corn.....	35	48.2±2.1	83.	4.0
Wheat.....	41	35.6±1.2	52.	6.0
Flax.....	11	13. ±1.3	27	3.0
Alfalfa.....	129	4.0 ±.11	7.2	.3
1st year alfalfa...	57	2.6 ±.10	6.0	.3
2nd year and older alfalfa.	72	5.2 ±.08	7.2	2.7

Crop Yields - Irrigated Rotations, Huntley, 1912-1918.

Beets.....	113	11.1±.19	17.9	4.8
Oats.....	121	77. ±1.4	127.	33.
Potatoes.....	103	251.±6.5	519.	5.
Corn.....	31	39. ±1.0	55.	25.
Wheat.....	31	30. ±1.3	62.	16.
Flax.....	14	18.8±2.0	32.	7.
Alfalfa.....	130	3.7 ±.15	7.9	.2
1st year alfalfa...	67	1.9 ±.07	3.7	.2
2nd year and older alfalfa.	63	5.7 ±.07	7.9	3.9

Western Irrigation Agriculture.Field Notes.

San Antonio.

During the week ending March 22, the maximum temperature was 83, minimum 37, and the greatest daily range 46. The weather, while not unusually warm, was rather dry so that oats began wilting. Conditions were good, however, for rapid germination of seeds recently planted.

Some replanting of corn on the rotation plats was done. The damage to the stand appeared to have been done by larks, ground squirrels, and field mice. One man has been kept busy shooting larks. Several ground squirrels were also hunted down. Poisoned corn was scattered over the plats but appeared to do little good.

Much weeding was done. Soil samples were taken on the corn plats. Roads were disked and graded.

A corn variety test for the Texas Field Crop Association was put in on F3. Eighteen varieties of sorghum were seeded on C4. Two one-acre plats on C4 were seeded to Sudan grass for the steer pasturing experiment. The field pea hay from rotation A4-G was hauled in. The yield was 346 pounds or at the rate of 1384 pounds an acre. The vines were very difficult to cut with the mower so that perhaps a fourth of the growth was left on the ground.

Mr. Letteer left for Washington March 21.

During the week ending March 29, the maximum temperature was 76, minimum 38, and greatest daily range 34. Precipitation amounted to 1.20 inches. Good growing weather prevailed, although part of the week was rather cool. Oats were needing rain as they had begun to wilt.

Much of the time it was too wet to work in the fields. All unplanted land was harrowed. B 6-18, where rye was plowed under, and B 6-8, B 6-10, and B 4-18, where field peas were plowed under, were disked. Rotation plats were weeded. Orchards were cultivated. The remainder of the time was spent in cleaning out the corrals, repairing fence, and repairing harness and machinery.

Mr. R. S. Kirby, who is investigating the grain rusts, visited the station on Thursday to observe the condition of different cereals with respect to rust. He has so far been unable to find any stem rust in this region.

Newlands (formerly Truckee-Carson).

During the week ending March 22, the new plats C 6 to 13 were each given a trial irrigation before seeding in order to locate more easily the high and low places. It was found that more leveling was needed on several of the plats. New plats H 5, 6 and 7 were also irrigated for a similar test.

Newlands (continued).

Plats G 1 and 5 were disked. Plats B 11 to 19 were harrowed after a light rainfall in order to prevent crusting of the surface. The cleaning of the drain ditches was continued.

A part of the orchard was furrowed and irrigated. The trees on tank house hill were pruned.

Yuma.

During the week ending January 18, temperatures were recorded at this station as follows: Maximum 76° , minimum 23° , and greatest daily range 45° . Two and one-half acres were irrigated.

A final picking of Pima cotton on plot E-45 was made. The vineyard of grape varieties, the block of blackberries and dewberries, and miscellaneous nursery plantings of trees and shrubs were pruned this week.

Melon and cantaloupe varieties were planted on border B-21. The work stock was busy during the week plowing and disking the series D-10 to 26 in preparation for seeding alfalfa. Work continued in setting irrigation gates.

During the week ending January 25, the following temperatures occurred at this station: Maximum 78° , minimum 29° , and greatest daily range 46° .

General work occupied most of the farm force for the week. A few trees were transplanted from nursery to orchard positions. Final leveling on fields D-10 to 26 in preparation for alfalfa seeding was completed. Fallow lands C-19 to 28 and C-31 and 32 were plowed.

Two bales of Durango cotton grown by a cooperator were ginned on the station saw gin this week, that all seed from this strain of Durango could be reserved without admixture for 1919 plantings.

During the week ending February 1, the following temperatures were recorded at this station: Maximum 77° , minimum 30° , and greatest daily range 43.5° . A precipitation of .27 inch occurred on January 31 and February 1. Twelve acres were irrigated.

Work stock was employed during the week, hauling gravel and leveling farm roads. Work was begun in tearing out the old wagon scales in use at the experiment farm and constructing a foundation for new scales. A six-ton Fairbanks-Morse scale is being installed.

More varieties of strawberry plants were received and planted in the variety test on A-13-3. Irish potato plantings were made on plots A-10-5 and A-12-2.

Messrs. C. H. Clark and A. D. Ellison of the Office of Cereal Investigations arrived at the station on March 28, for a short stay while cooperative plantings of flax for seed production might be arranged with various farmers on the Yuma project. Mr. Ellison will remain to follow up this particular work.

Yuma (continued).

During the week ending February 8, temperatures occurred at this station as follows: Maximum 74°, minimum 29°, and greatest daily range 35°.

Field series D-13 to 26 was planted to a variety test of alfalfa, eight varieties being seeded in duplicate plots as follows: Indian, Hairy Peruvian, Smooth Peruvian, Arizona Common, Kansas Common, Turkestan, Grimm, and Baltic. Plots D-10 to 12 inclusive, were seeded to Hairy Peruvian alfalfa with flax as a companion crop. Flax is being grown for a seed crop that should mature about the time that the young alfalfa should be cut the first time.

Picking of Durango cotton on A-24 was completed. The pomegranate planting on field C-18 was pruned.

During the week ending February 15, temperatures were recorded at this station as follows: Maximum 78.5°, minimum 28.5°, and greatest daily range 45°.

Cotton and corn stalks were cut on a number of farm plots and the following were plowed: A-1 to 8, 23, C-19, 20 and E-2.

Several loads of fine manure were secured within a short haul from the station and were applied to the ground lawns.

The installing of the wagon scales was completed. A carload of mesquite posts purchased and shipped from the southern end of the project was unloaded at Bard and hauled to the experiment farm.

The pruning of the fig orchard C-7 to 17 was completed and pruning begun in the variety deciduous orchard.

Several hundred selected plants of Hairy Peruvian alfalfa were dug from fields on the experiment farm and transplanted to a plot on A-10-2 where it is intended that the plot be enclosed with fine mesh screen wire in order to secure seed from these plants that will not be cross-pollinated. This is being done in order to secure a strain of pure seed for further propagation. It is recognized that the alfalfa varieties on the Yuma project are becoming quite badly mixed. If such a condition is not remedied the very good grade of alfalfa seed that has been produced here in past years will not be maintained.

Mr. A. R. Evans of the Bureau of Markets visited the station on February 10 and 11.

During the week ending February 22, the following temperatures occurred at this station: Maximum 75°, minimum 32°, and greatest daily range 41°. An irrigation of 17 acres was applied. Irrigation water from now on through the season will be in the ditches each week rather than every two weeks.

The cement coping about the roadways through the grounds is being built four inches higher to facilitate irrigation.

Work stock was kept busy plowing and hauling gravel. The following fields were plowed: A-23 and 24, E-42 and 45.

Seedling date plantings on A-16 and 17 were pruned and the pruning of the deciduous orchard completed. All cotton ginning for the year was completed this week.

Messrs. George Butterworth and F. E. Devine of the Bureau of Markets were visitors at the station for two days of the week.

Yuma (continued).

Messrs. H. L. Westover and R. E. Blair departed on the 19th en route to Salt River, Rio Grande, and Carlsbad projects.

During the week ending March 1, the following temperatures were recorded at this station: Maximum 74° , minimum 28° , and greatest daily range 42° . There was no irrigation applied during the week. Spring garden varieties were planted on A-12-3.

General work continued through the week, such as building coping, hauling gravel, and plowing. Seedling dates on borders A-18 to 21 were pruned.

A number of mesquite fence posts were prepared for setting in fence line, by being dipped in crude oil.

During the week ending March 8, temperatures occurred at this station as follows: Maximum 77° , minimum 29° , and greatest daily range 43° . Twenty acres were irrigated.

The general work of the station was carried out: Borders A-1 to 8 were plowed; pruning seedling dates on borders A-25, C-42 and 45 continued; the pruning of pecan trees on F-1 was completed; hauling of date brush from the orchard was begun.

Messrs. E. G. Noble and D. M. Simpson arrived at the experiment farm during the week.

During the week ending March 15, temperatures were recorded at this station as follows: Maximum 80° , minimum 31° , and greatest daily range 45° . A precipitation of .12 inch occurred on March 14. Twelve acres were irrigated.

Work stock was kept busy completing the leveling on D-27 to 36. A supply of wood was hauled and sawed. One man was busy painting the bunkhouse and field stakes. The dates around the farm roads were pruned and brush hauled.

The spraying of all deciduous fruit trees and ornamentals with lime-sulphur spray, as a preventative, was begun on the 13th. All deciduous fruits are much later this spring than normally. Quite an area of land is already prepared for planting cotton but very little has yet been planted as the nights continue very cool. A few farmers are working the first cutting of Hairy Peruvian alfalfa hay.

Demonstrations on Reclamation Projects.

Field Notes.

Belle Fourche.

Snow and rain during the week ending March 29 has prevented very much travel. However, ten farm visits were made and six office conferences held.

Arrangements were completed for the first cooperative sale of feeder hogs. While the sale has now been turned into a cooperative combination

Belle Fourche (continued)

sale at this time, it was intended to include only hogs that were expected to be consigned to a cooperative shipment to market. It was thought advisable, now that the hogs had been carried over the winter, to keep them on the project. Accordingly arrangements to see them among project farmers were made. About 100 head will be sold.

A conference was held with the State representative from this district regarding possible assistance from the State Railway Commission regarding the correction of conditions at Long Pine, Nebraska. The representative suggested he would soon see the members of the commission and would place the matter before them. It is at least expected that the commission can make some valuable suggestions in how to approach the railway company regarding the matter.

One-half day was spent in conference with the county agent of Lawrence County, the Farm Management representative from the State Agricultural College, and the Smith-Hughes Agricultural instructor of the Belle Fourche High School.

A movement is now under way to organize the breeders of the Black Hills counties into one livestock breeders' association. Plans have been made to hold sales at each of the towns in the district. A pavilion to hold the sales at Belle Fourche will be built in the very near future. Rapid City and Spearfish, South Dakota, are also planning on pavilions for this purpose.

Huntley.

During the week ending March 22, five calls for assistance were received and 20 farm visits were made.

As a result of last week's efforts and by means of one public sale, seventeen registered Duroc gilts bred for spring litters were distributed over the project. Thirteen farms secured one or more of these, ten going west of Lateral "D".

Twenty-eight samples of milk were tested, and assistance was given the District Veterinarian in lining up herds of milk cows for the tuberculin test.

During the week ending March 29, fourteen farm visits were made and the office received eight requests for assistance.

The calves on three farms were vaccinated against blackleg. Several losses have occurred lately from this disease, one of which was a calf from a Holstein cow brought in with a recent shipment.

One day was spent with the agent for Yellowstone County discussing plans for cooperation on the project. A meeting called by the county agent at Pompey's Pillar for the purpose of organizing a farm bureau was attended.

At the request of B. E. Davis, Superintendent, of the consolidated schools, assistance was given in demonstrating stock judging to the agricultural class at Pompey's Pillar, and arrangements were made for another demonstration at the Garnesey school.

With the exception of one day, the weather during the week was favorable for farming operations and plowing could be done on all but the wettest land.

Minidoka.

During the week ending March 22, two telephone calls for assistance were received and there were eight callers at the office. Thirteen conferences were held during the week, on the following subjects: sheep, 7; dairying, 16; animal diseases, 3; beef industry, 3 and poultry, 1. Twenty-one circular letters were mailed and eighteen bulletins sent out.

Road and weather conditions are excellent which is a great asset to field work. Farmers are getting into the fields and spring work will start in full swing in a few days.

The calf club which is being started in Cassia County is well under way. Undoubtedly stock will be purchased for the members some time during the spring and early summer.

Considerable time was spent in the development of the sheep grazing association during the week. Organization meetings are to be held during the coming week.

North Platte.

During the week ending March 29, four days were spent in visiting farmers on the project in the interest of the Dairy Cattle Breeders' Association, and in getting members for the Cow Testing Association. There are now about forty members of the former association and about twenty-two members in the latter. The present plans are to have the cow-testing work begin on June 1st, providing a competent man can be secured to do the work of testing. Judging from the interest shown in the prospective cow testing association, it seems as though this work will be a great success. Practically all of the men having more than five dairy cows are either joining the cow testing association now, or state that they wish to join a little later.

One day of the week was spent with the Live Stock Manager of the Great Western Sugar Company. Some 2500 head of steers on feed were viewed in the various feed-lots. The cattle are being fed three different rations this year and the sugar company will furnish this office with the data after the cattle are shipped. The thing that most impresses a visitor to these feed lots is the care which is exercised in feeding. The rations are balanced as nicely as possible, the cattle are made as comfortable as possible, and the lots and feed bunks are so arranged that a minimum of labor is required and not one ounce of feed is wasted that can possibly be saved. The hay that is "mussed" over by the steers is taken out and fed to a herd of breeding cows kept for the purpose of cleaning up this otherwise waste feed.

Shoshone.

During the week ending March 22, thirty office calls were received and 1 other conference was held.

A cooperative shipment of a car of cattle was made, 13 men cooperating in the shipment.

A meeting of the Deaver Chamber of Commerce was addressed on the subject of livestock, about 50 men being present.

Shoshone (continued).

Wrote newspaper article on the methods of raising bum lambs used by Mr. W. S. Hanson of Utah. The bulletin describing this method had been obtained for several of the sheep owners.

A farm bureau is being organized in Big Horn County, in which the Deaver division of this project is located. Two of the College faculty have been assisting the county agent in this work. This force visited farmers of the Deaver community Saturday, and held a meeting Saturday evening, about 50 being present, when a local chapter of the bureau was organized. The local representative of this office had been invited to assist and a discussion was given of the ways in which the different live-stock industries would be benefited by this organization.

A few farmers are starting plowing. The weather is excellent. Newlands (formerly Truckee-Carson).

During the week ending March 22, thirty-four calls for assistance were received, and nine visits were made to farms in response to calls. During the week the regular monthly herd testing was performed for two dairy herds. It is interesting to note that one of these dairy herds, which has had over thirty animals on milk each month, has had an average daily production of one pound of butterfat. This average production has been kept at this point by eliminating the low producers by means of the monthly herd test. Young dairy heifers have replaced older unprofitable cows.

Definite arrangements have been made for the operation of the local community pasture. This matter has been very much unsettled for the past six months, and the farmers have been very much in suspense as to what disposition would be made of the matter. It is expected now that the arrangements will be quite satisfactory to the farmers.

The interest in silo construction continues to grow. There will no doubt be several trials at growing Russian sunflowers for silage. During the week an article was contributed to the local paper on the different types of silos and their adaptability to local conditions.

WEEKLY BULLETIN
Of the Offices of
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and
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No. 15

Western Irrigation Agriculture.

Field Notes.

Huntley.

Field work was begun on March 24 and continued throughout the week. The amount of precipitation during the past winter was unusually light, and as a consequence there was a lack of moisture in the soil. Some slight damage has resulted from soil blowing, although this is not sufficient to be serious and in most cases winter grains are in fairly good condition.

The open winter has resulted in a decline in the price of hay. Alfalfa sold early in the season at about \$15 per ton in the stack, while recently a large amount was sold at from \$10 to \$12. A large amount of the hay that was shipped went to the drought area in the northern part of the state, although some was shipped to the neighboring states on the east.

The contracted acreage of sugar beets for 1919 is reported to be about 14,000 acres for the Billings factory territory, which is an increase of about 5,000 acres over 1918.

A shipment of four Holstein cows from the herd of the Arden farms in Minnesota and a Holstein bull from Michigan was received recently at the station. One of the Holstein cows at the Experiment Farm completed a year's advanced registry test with a production of 24,075 pounds of milk and 691.51 pounds of butterfat.

Newlands (formerly Truckee-Carson).

During the week ending March 29, six barley varieties -- Chevalier, Coast, Hulless or Bald, Hannchen, Svanhals and Trebi -- were planted on plats H 14 and 15, each barley plat having an area of .07 acre.

Plats Y 1, 2, 3, 4, 5, 6, 7, 8, 9; B 5, 6, 9, 10; C 6, 7, 8 and 9 were leveled. Little Club wheat was planted in rotation plats D 2 and D 6 and F 5 and 9. Coast barley was planted in plats B 11 to 18 inclusive, and in rotation plats F 4 and 16.

Newlands (continued.)

The following alfalfa plats were harrowed C 1; D 3, 4, 7 and 8; F 1, 2, 6, 7 and 8. The work of cleaning the drain ditches was continued.

The apple and pear trees in A 1, 2 and 3 were sprayed with lime-sulphur solution to kill the red spider.

San Antonio.

During the week ending April 5, the maximum temperature was 80°, minimum 49°, and the greatest daily range 31°. The rainfall amounted to 1.87 inches. The temperature was moderate and the weather good for crop growth.

On account of wet weather a good deal of time was spent about the grounds and buildings, repairing fences, cleaning out the corral, cutting weeds, and mowing the lawn.

The corn was thinned on a few of the rotation plats. Grub worms were found to be working very much on some of the plats, so it was decided to stop thinning and dig out the worms. As many as 70 or 75 were found on a single plat. Plats near Johnson grass land as a rule appeared to have the most grubs.

All except two of the cotton plats in the rotations were harrowed. Orchard E4 was cultivated. Soil samples were taken on the sorghum plats. Forty fruit trees (S.P.I.) were set out in orchards A1, B3, and E3. A3, where Rhodes grass is to be seeded, was disked and harrowed.

Mr. E. B. Brown of the Office of Corn Investigations visited the station on Wednesday.

Demonstrations on Reclamation Projects.Field Notes.

Huntley.

Monday and Tuesday of the week ending April 5 were used in moving the office furniture and other property of the Department from Huntley to Ballantine. This change was made chiefly because Ballantine is more centrally located.

Assistance was given to one man who wished to buy a bull, and to the District Veterinarian who gave the tuberculin test to four herds of dairy cows.

Blackleg vaccine was administered to 135 calves, and advice given one owner of aborting cows.

Two samples of cream were tested.

Nine farm visits were made and four office calls received.

A stock judging demonstration was given at the Pompeys Pillar school.

Minidoka.

During the week ending March 29, the live-stock work assumed a more definite atmosphere and several things were definitely started or completed.

Both of the sheep grazing associations were re-organized. Three bands of sheep will be sent to the Sawtooth Range from Cassia County, and one band will be sent from Minidoka County.

The silo excursion was a success. Four automobiles from Minidoka County and Cassia County went to Twin Falls, Thursday, and came back on Friday. A silo meeting was held at Twin Falls on Thursday at which approximately fifty people were present.

North Platte.

During the week ending April 5, practically all of the time was given in the interest of the Platte Valley Dairy Association. A conference was held with the officers of the association in regard to plans for the proposed cow testing association, and a number of members of the dairy association were visited in regard to the work. There is still some misunderstanding among the members relative to the cow testing work, but it is hoped that an efficient cow testing association will be formed in the near future, ready to go to work.

Two large public sales of registered Hereford cattle were attended during the week, the John Heinz sale at Morrill, and the Evan Forrell sale at Scottsbluff. At these two sales there were about 100 head of cattle disposed of at an average price of more than \$400 per head. Most of the cattle stayed in this part of the country. There were large crowds in attendance at both sales and a lively interest was shown.

Uncompahgre.

Seven farms were visited during the week ending March 29, and calls were received from 14 sources.

The first part of the week being stormy, the time was spent at the office.

A letter was sent to each of the Duroc-Jersey breeders, relative to herd nomination in the District Futurity at the fair next fall.

A hog-feeding test was completed during the week on the farm of E. N. Gibson in which 21 head of shoats had been fed 55 days on ground wheat, cooked potatoes, and alfalfa hay. They were on self-feeder and put on very satisfactory gains. In this test, it required 379 pounds of wheat to produce 100 pounds of gain. The cost per pound of gain was 12.3 per cent. This allowed a very satisfactory margin of profit as pork is worth 17 cents at home.

Uncompahgre (continued.)

A hog buyer is at Olathe buying feeder hogs. He has paid as high as 15-1/2 cents for some.

Plans are under way to form a small grazing association among project farmers. Range was allotted for 1,200 head of sheep and nine owners.

The second Annual Corn Show was held at Olathe on Saturday of the week. There was an excellent display of corn brought in regardless of the fact that this event had been twice postponed on account of sickness. The show was a success, showing a great deal of interest in better methods of growing corn.

W E E K L Y B U L L E T I N

Of the Offices of

WESTERN IRRIGATION AGRICULTURE and DEMONSTRATIONSON RECLAMATION PROJECTS

Vol. XV.

April 19, 1919.

No. 16

Western Irrigation Agriculture.

Field Notes.

Newlands (formerly Truckee-Carson).

During the week ending April 5, gypsum was applied on plats B 20, 21 and 22 at the rate of 2,160 pounds per acre, and on Y 1 to 8 inclusive at the same rate. An error was made in the latter field as the plans did not call for gypsum on plats Y 2, 5 and 8.

Beets, carrots, parsnips, radish, lettuce, onions and four varieties of peas were planted in A 1 and A 2.

Fields Y 1 to 8; B 1 to 4; and C 2 to 5 were harrowed with the spike-tooth harrow.

A grass mixture consisting of grass varieties mixed in the following proportion was seeded in plats C 2, 3, 4 and 5, and irrigated after seeding:- Alsike clover 1 lb.; white clover 1 lb.; bromus inermis 7 lbs.; tall-oat grass 6 lbs.; orchard grass 5 lbs.; perennial rye 3 lbs.; Kentucky bluegrass 3 lbs.; meadow fescue 3 lbs.

On Saturday, April 5, there was one of the most violent wind storms that has occurred for several years. It is probable that the wheat variety plats and the grass plats of C were badly damaged.

Plats D 2 and 6, and F 5 and 9, were seeded to alfalfa at the rate of 15 pounds per acre.

Barley was planted in plats Y 1 to 8 inclusive and in B 20, 21 and 22.

A number of irrigation boxes were put in place and two flumes crossing C drain were repaired.

Fruit trees purchased from Stark Brothers Nursery were planted in A 1 and A 2 as follows:

8 varieties apples	2 varieties apricots
3 varieties pears	4 varieties plums
6 varieties peaches	6 varieties cherries

San Antonio.

During the week ending April 12, the maximum temperature was 83°, minimum 42°, and the greatest daily range 35°. Rather cool

San Antonio (continued).

weather prevailed during much of the week.

Cotton was planted on the rotation plats April 11 and in the root-rot test on C5 April 12. Harrowing of land not in crops was finished. Orchards were cultivated. Corn, milo, and sorghum on the rotation plats were cultivated the first time. Sorghum varieties on C4 and corn varieties on C5 and F3 were cultivated. Grub worms were dug out of the corn on the rotations and on C5. The cotton plats and part of the corn plats in the rotations, the plat of sorghum varieties on C4 and field C6 were weeded. Milo was planted in the missing hills of the corn experiments conducted by the Office of Corn Investigations.

On Monday afternoon a class of pupils from one of San Antonio's high schools visited the station to study general agriculture in the field. On Wednesday afternoon a group of wounded soldiers from the base hospital at Fort Sam Houston came to study agronomy problems particularly.

Demonstrations on Reclamation Projects.

Field Notes.

Belle Fourche.

On Sunday of the week ending April 12 in company with Dr. J. T. E. Dinwoodie, Extension Veterinarian of the State College at Brookings, a trip was made to a point 70 miles north of Belle Fourche, in the range country, to investigate a case of suspected anthrax. Eleven cows in calf and one steer had died within two weeks. Upon arrival it was found that surrounding cattlemen had buried the carcasses, completing the job that morning. No postmortems could be made, but from description of symptoms anthrax was suspected, and advice given to vaccinate. The cattle were in very good condition as the winter has been a very mild one.

Tuesday of this week was spent in getting out a circular letter calling a meeting of Newell farmers to discuss the organization of a cooperative live-stock shipping association and wool marketing association.

Wednesday a conference was held with Dr. J. E. Phelps, State Veterinarian, Frank Cock, Chairman of House Committee on Live-Stock Sanitary Control, and the local veterinarian, to outline an area which is to be locally quarantined against the use of hog cholera virus and quarantined against certain hog importations, with a view to preventing cholera gaining entrance to the project.

Thursday a conference was held on the county agent proposition with the Assistant County Agent Leader. There is no agent in this county as yet.

Saturday of this week a cooperative live-stock shipping association and wool marketing association was perfected at Newell.

Heavy snows during the week prevented travel on the project by automobile.

Belle Fourche (continued).

Thirteen office calls were received during the week ending April 5.

The cooperative sale arranged for Saturday of this week was held at Vale. Not as many hogs were consigned as expected. However, sixty-five head were brought in. These sold for an average of 20 cents per pound. The farmers had previously been offered 16 cents per pound for them by local buyers. Instead of being shipped out, the hogs will remain on the project for summer pasturage and be marketed this fall.

One conference was held with the Extension Veterinarian, Dr. Dinwoodie, from the State College at Brookings. Local live-stock sanitary control work was discussed.

Yakima.

Six calls were answered during the week ending March 22, 14 farms were visited and nine conferences were held. One farmers' meeting was attended at which 55 farmers began the organization of a county farm bureau. One day was spent in helping to inoculate seed peas, adjusting a drill for planting them, and in planning a pig pasturing, hogging off and feeding system for this season.

The range sheep bands are reporting lambing percentages of from 105 to 125. The grass has come on rapidly and the ewes are in good condition and milking well. Shearing is also well under way. The shearing price of 20 cents per head is causing a number of owners to contemplate installing their own equipment next season, and training new men for the work. Several wool buyers are in the Valley, but no deals have been reported. Inasmuch as the Yakima shearing begins comparatively early there is usually considerable delay in starting wool sales.

The cooperative sheep grazing association begun by Benton county agent Lampson has about 800 sheep signed up, and some time has been spent in visiting owners of farm flocks to secure the 400 to 450 more required to fill up the band. A number of flocks have been located, and it is probable that the number will be secured with little difficulty. The estimated cost of handling this band is \$2.75 per head for grazing from April 15 to December 1. The high rate is due to the necessity of shipping to range in the northern part of the State, and of planning to return the band by rail unless there is sufficient grazing at that time to allow trailing. The shipping charge, one way, is 30 cents per head.

Two calls for assistance were answered during the week ending March 29, twenty-three farms were visited and eight conferences were held. One day was spent in visiting districts of the Wapato Unit not before visited. One forenoon was spent in helping to plan the details of pig management, and feeding on a small orchard, dairy and pig farm.

Yakima (continued).

The Annual Pig Club convention for the county was held on the 29th at the Lower Naches High School. The pig club members, in addition to their local club organizations, have a county organization with the proper officers, program and plan of cooperation. The corn clubs met with the pig clubs this year. Both pig and corn judging contests were held in addition to the annual business meeting, talks by "experts," a baseball game, a dinner furnished by the Lower Naches club, and posing before a moving picture camera.

There has been a marked tendency for pig club leaders to promote the club work largely on the strength of marketing the pigs as breeding stock at breeders' prices. In some instances this plan has worked well. The McKinley club leader has given a great deal of time to helping his club to fit their pigs for the fairs, to exhibit them properly, and to finding a market for the pigs. Others have seemingly attempted to follow his example and have been less successful. In cooperation with the Yakima county agent this office has attempted to help some of the boy owners to readjust their conception of the pig business to a pork production basis, and, with the cooperation of the leaders, to plan more conservatively for the future.

A questionnaire has been prepared by the secretary of the Washington Hay Growers' Association, a Yakima Valley organization, by which it is hoped to arrive at some average of the cost of growing alfalfa hay. This association began as a market information disseminating agency, and in 1918 it undertook to market hay direct to farmer buyers. The direct marketing proved so popular that the association became a decided factor in marketing the 1918 crop. The outlook for this work in 1919 is very good, and a dependable cost of production survey will accomplish a great deal toward stabilizing the direct marketing situation.

Five calls were answered during the week ending April 5, seventeen farms were visited and eight office conferences were held. One day was spent at Spokane in conferences with Spokane County Agent Shinn, Dean Johnson of the State College, and in attending the meeting of the club leaders of the Northwest.

There has been a good demand for bred sows and gilts and weanling pigs in Spokane county, and a number of the Yakima farmers and boy pig owners have desirable stock for sale. Prices have been lower on the project than in Spokane county, and it is probable that some project sows and pigs can be sold to good advantage in Spokane. Less was learned from the program of the Northwestern Club Leaders' meeting than in discussion with individuals. W. T. McCall, of Idaho, explained how the pig club work is included in the county farm bureau projects, and how the club members are thus "brought up" to consider their responsibility as members of the community program and as live-stock "men." The management of club exhibits, judging teams, and home economics and live-stock demonstrations at district, state and interstate fairs was discussed.

A short conference was had with Mr. Roberts, of the Union Stock Yards at Spokane. Mr. Roberts has been conducting a campaign for over

Yakima (continued.)

a year to encourage farmers to bring or consign their live stock to the Spokane yards instead of trading with the itinerant dealers. The campaign has been quite successful. The number of farmer shippers is steadily increasing and their appreciation of the management of the yards and of the operation of the market is creating a better sentiment toward the market end of the industry. The prime hogs on the market on April 2 sold at \$19 per cwt. with a strong demand. Two cars of steers sold at \$12 per cwt., and a good load of lambs went at \$16.75.

The Poland China Registry Association has offered the 1919 State Futurity Show to the state fair at Yakima. A number of Duroc-Jersey breeders are seeking the same awards for their local exhibits. The presence of these shows may help to establish the breeders' associations which it is hoped to bring into existence this fall.

Minidoka.

During the week ending April 5, eight farm visits were made; seventeen office calls were received; three conferences were had; and two meetings were addressed, at which the attendance was one hundred and twenty-five.

One herd of pure-bred Herefords were vaccinated against black-leg.

One day was spent with the cheese specialist from the Western Office of the Dairy Division in investigating the cheese situation on the project. There is considerable interest among a few farmers near Paul in regard to starting the Paul cheese factory again.

A meeting was attended at View, the purpose of which was to discuss the merits of the Holstein and Shorthorn breeds of cattle. The consensus of opinion seemed to favor the former, although there is a good deal of interest in the milking Shorthorn.

One of the events of the week was a sale of pure-bred Shorthorns owned by Frank Sullivan, on the project. These were bought in the East a short time ago, and were dispersed at public sale. One of the cows at the sale brought \$525. The stock were not in very good condition and were not an exceptional grade.

Much interest is developing in the organization of a wool pool, and it seems likely that this will be accomplished within the next few weeks.

The week was a notable one in the history of live-stock development in Idaho. At a stock show held in Salt Lake City, all the first prizes went to Idaho exhibitors. The Portland Feeder Company, of Burley, won first premium with its carload of Aberdeen-Angus in competition with twenty cars. Their lot of fifteen two-year olds averaged 1125 pounds, and sold for twenty-four cents per pound. Six cars of sheep were exhibited and the first premium went to Blackfoot, Idaho. Thirteen cars of hogs were shown and the first premium went to Filer, Idaho. Exhibits were made from five States: Wyoming, Utah, Idaho, Colorado, and Nevada.

MISCELLANEOUS.

Following is a copy of Memorandum No. 273, from the Office of the Secretary, under date of April 5, 1919:

"MEMORANDUM NO. 273.

Domestic Telegraph Rates Increased.

"General attention is invited to the following excerpts from order No. 2940, Office of the Postmaster General, March 29, 1919:

"Effective from April 1, 1919,*** the telegraph rates for domestic United States Government telegrams are increased twenty per cent over the present Government rates.

'Government leased wires shall be charged for at an advance of twenty per cent over existing leased wire rates, whether such wires be furnished by a telegraph or a telephone system under Government control.'

"In the audit of telegraph accounts against the Department of Agriculture for service on and after April 1, 1919, the rates indicated in Appendix D of the Fiscal Regulations will accordingly be increased twenty per cent. The Fiscal Regulations are amended accordingly.

D. F. HOUSTON.

Secretary."

WEEKLY BULLETIN

Of the Offices of

WESTERN IRRIGATION AGRICULTURE and DEMONSTRATIONS ON RECLAMATION PROJECTS

Vol. XV.

April 26, 1919.

No. 17

Western Irrigation Agriculture.

Field Notes.

Newlands.

During the week ending April 12, the west half of plat A 3 was divided into small plats, each having an area of about 20 x 30 feet. These small plats were then planted to grass and clover varieties as follows: Mammoth red clover; red clover; white clover; Italian rye grass; English rye grass; red top; Kentucky bluegrass; creeping bent grass; Rhode Island bent grass; tall fescue; hard fescue; meadow fescue; sheep fescue; meadow grass; timothy; sweet vernal; tall oat grass; crested dogs tail; orchard grass; Bromus inermis; and amaranthus paniculatus.

During the week the following fields were irrigated: H 1, 2, 7, 8, 9, 10, 17, 18; A 1, 2, 3; C 2 to 13 inclusive; D 1, 2, 3, 4, 6, 7, 8; E 3, 4, 5, 6; B 1, 2, 3, 4, 7, 8, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22.

Several of the ditches that were filled with sand during the wind storm of April 5 were again cleaned.

Plats C 5 to 13 inclusive were leveled and seeded to barley. Sulfur was applied to B 6 at the rate of 1,000 pounds per acre, which is 400 pounds to the plat. Gypsum was applied to B 5 at the rate of approximately 2 tons per acre. Plats B 1 and 3 received an application of 260 pounds acid phosphate per acre.

Barley was seeded on plats Y 9, B 1, 2, 3 and 4.

Demonstrations on Reclamation Projects.

Field Notes.

Huntley.

During the week ending April 12, sixteen farm visits were made and 6 office calls were received.

Two Farm Bureau meetings were attended with the county agent, at which programs of work in two communities were formed.

Huntley (continued).

After a conference with the Boys' and Girls' Club Leader, assistance was given in locating pigs for sale.

Some time was spent assisting farmers with feeding problems arising from the recent purchases of pure-bred gilts. A number of these men who had had in mind the purchase of a good boar cooperatively, in the end decided not to buy until later as some of them do not wish to breed for fall litters.

One day was spent at the eastern end of the project getting acquainted with the country and some of the farmers.

Another stock judging demonstration was given at the Pompeys' Pillar School. The schools on the project are planning for a final stock judging contest to be held in June at some central point. As none of the teachers have had training along this line, and as it furnishes an opportunity for the agriculturist to get acquainted, he is assisting.

During the week ending April 19, sixteen requests for assistance were received, not including 5 office calls, and 24 farm visits were made. Two conferences with bankers were had.

Assistance was given the project club leader in the way of inducing the boys and girls to secure pure-bred pigs rather than grades or scrubs.

A dairy cow stock judging demonstration was given on a farm near the Anita School.

More than half the requests for assistance during the week were due to sickness among stock. Several cases of mycotic stomatitis in cattle came to notice, but no loss from this disease has occurred. Several cases of difficult parturition in sows received attention. A few sows have been lost from this cause. The trouble is to be attributed in almost every case to faulty care and feeding.

Eighteen samples of milk were tested.

Minidoka.

During the week ending April 12, a conference was held with Mr. Kerr, swine specialist for Idaho, making arrangements for demonstrations on six farms in Minidoka County. Demonstrations of a similar nature will be held in Cassia County.

There is a great deal of interest in cheese factories, both in Rupert and at Paul. In Rupert, there is a defunct creamery and in Paul, a defunct cheese factory. The creamery became an extinct organization largely because of being organized by promoters, and at too early a stage in the project's development.

The cheese factory at Paul is a well equipped and an expansive arranged plant. It is said by some men that the factory is a monument to industry on account of the expensive building. The organization became defunct through an inefficient board of directors; too expensive investment in buildings; and an inefficient cheese maker.

How to place two derelicts of this type in operation, especially in a country that needs successful dairy enterprises, is a problem

Minidoka (continued).

which needs considerable care and proper procedure in developing. There is one thriving cheese factory at Acequia, and people are quickly realizing the benefits of this concern to the community. While it maytake a few months to develop these factories and start them properly there is good prospects of placing these two factories on a firm basis.

Office calls 18. Farm visits 32. Addressed 3 meetings, attendance 136. Circular letters 35. News articles 4.

Newlands.

The dairy interests of the Newlands Project has been considerably advanced by the recent importation into it of two registered Holstein cows imported from California, and one registered Jersey bull imported from Oregon. The Jersey bull deserves especial mention as he is a grandson of the recent world's record Jersey cow, Vive La France, with a record of 14,926 pounds of milk and 1,028.96 pounds of butter fat in a year. The grandson of this calf, Golden Glow's Chief, is also the highest record Jersey bull by test of daughters. Thirty-eight of his daughters average 520 pounds of butter fat in one year. This bull is also the sire of Vive La France, thus concentrating the blood of Golden Glow's Chief in this Jersey bull that has recently been imported.

In addition to these importations, assistance was rendered during the week ending April 12 in selecting a well-bred registered Holstein bull from a local Holstein breeder. The bull will head a local herd. Dairying in this project shows a very healthy condition. Good foundation cows are in big demand with a strong inclination toward pure-bred animals.

During the week there were received 33 calls for assistance and visits were made to five farms.

Shoshone.

During the week ending March 29, six farm visits were made, 17 office calls were received and 7 other conferences were held.

Returns were received on the car of cattle shipped last week. Cows sold for \$6.00, \$7.00, \$8.00, \$9.00 and \$11.00 per cwt. Steers sold for \$5.00, \$7.50, and \$9.00 per cwt. Small, thin yearlings sold for \$5.00 per cwt. Two bulls sold for \$7.00 and \$8.50 per cwt. The expense was 90 cents per cwt. not counting shrinkage.

The cooperative creamery installed a new boiler and city water this week.

An article was contributed to the local papers about shipping hogs. There is listed almost a carload each of fat and stock hogs and some of those who have hogs listed are very anxious to get rid of them, because feed is scarce and they are getting busy with farm work.

Shoshone (continued).

One day was spent at Lovell attending a meeting of the County Farm Bureau which is composed of representatives from the different communities. An address was given on live-stock organization.

Uncompahgre.

During the week ending April 12, thirteen farm visits were made and calls were received from ten sources.

Owing to the busy season in the fields it has not been possible to accomplish any degree of satisfaction in work in the field.

One day was given to assisting one farmer in getting ideas relative to successful hog raising. Several farms were visited in this connection. More work was done on the importation of dairy cattle. One man was secured who wanted ten head.

A meeting of the Olathe Hog Shippers' Association was attended on Wednesday night. Election of officers was held. The association has shipped 11 carloads of hogs for the membership since its organization.

A meeting of the Board of Directors of the Health Protective Association was attended and assistance given in the general plan of operation.

Butterfat is selling at 60 cents per pound.

Two carloads of hogs shipped from the project to the Denver market topped the market during the week, bringing \$20.25 per hundred.

W E E K L Y B U L L E T I N
Of the Offices of
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No. 18.

LIVE STOCK DEVELOPMENT ON THE BELLE FOURCHE RECLAMATION
PROJECT IN 1918.

By E. H. Aicher, Agriculturist.

GENERAL STATEMENT

Demonstration work was begun on the Belle Fourche Reclamation Project in June, 1918, therefore, the report which follows covers only the period from June to December. However, from general observations and numerous conferences some rather definite conclusions have been reached.

The prevailing high prices for live stock products made a very successful live stock season. In a measure, the prices caused a heavy disposal of sheep, hogs and beef cattle, which accounts for some of the shortage as shown by the reports of the ditch riders of the Reclamation Service. Dairy cattle, on the other hand, can not be had in sufficient numbers to meet the demand.

The high prices paid for butter-fat during the year added new life to the dairy industry and dairymen have been so enthusiastic as to lead others into this industry. The year 1918 showed a large increase over previous years in dairying and there seems to be no reason why it should not be the leading industry on the project. Before this can be accomplished better buildings will have to be provided, as well as improved watering facilities, better feeding and care and better breeding methods. Good dairy cattle are at a premium, prices ranging from \$125 upward for cows of average merit.

Government control of wool brought approximately 60 cents per pound, and as a result the sheep industry has received a marked stimulus. In some sections of the project there is a tendency to combine the sheep and dairy industries to the exclusion of all other industries. It is noted that where buildings are being constructed they are mostly modern sheep barns or sheds. The cows are retained for use in the spring for producing milk for orphan lambs and cream for the remainder of the season.

The reasons for this tendency toward the sheep industry are:

- (1) The abundant sheep range adjoining the project on all sides;
- (2) that returns from the industry come when most needed, that is, wool in the spring and the marketing of lambs or sheep in the fall or winter; (3) sheep require less high-priced feed and do not take up much of the farmer's time during the crop season; and (4) the

expense of buildings is not as high as with other live stock, which is a large item where lumber is scarce and high in price.

Very little sheep feeding was done during the year, due mostly to the severe losses sustained during 1917, when, during the fall and winter, many farmers lost their feed and, in addition, a loss of several cents per pound on the lambs. However, in every case where lambs were fed in 1918, a good profit was realized. Several carloads of lambs were bought for \$6 per head kept for three or four months and sold for \$12 per head. Altogether, the sheep industry is a very promising one and is rapidly replacing cattle on the range, especially where the Government has opened adjoining range land for settlement.

The swine industry is also a promising one, and a decided improvement in the type of hogs is evident. Many high-bred animals were imported during the year and ten or more pure-bred herds established. While the industry shows a decided decrease--or about 1900 head less than 1917--it is believed that a great deal of this is due to liquidation brought on by the action of the food administration in postponing establishing prices until a few days before the first of each succeeding month; also by the almost elimination of hogs from the Arpan district in favor of the breeding of sheep and dairy cattle.

The prospects for a progressive hog industry on the project are very bright. It is expected that marketing conditions will shortly be improved, thus lending encouragement to the growers and will no doubt bring about a heavy increased production. Anything but a pure-bred sire is hard to sell, and the results from the use of pure-bred sires in the swine industry are so outstanding as to influence the choice of better sires in other live stock industries.

There has been a general decline in the beef industry. While it will no doubt always have a prominent place, from present indications sheep will replace many beef cattle on project farms. Indications indicate a development along feeding lines, with the utilization of home-grown grains and forage instead of shipping these crops to market. The use of pure-bred bulls is becoming more and more apparent.

STOCK POPULATION.

The following tables showing the live stock population are taken from the report of the Reclamation Office at Newell, South Dakota. This information is compiled from crop statistic record cards gathered by the ditch riders in a house to house canvass.

Numerical Comparison for 1917 and 1918.

Class of Live stock	Dec. 31, 1917	Dec. 31, 1918	
Horses.....	3734	3877	Increase 143
Mules.....	88	97	Increase 8
Beef cattle.....	6616	4801	Decrease 1815
Dairy cattle.....	2912	3330	Increase 418
Sheep.....	36459	35607	Decrease 825
Hogs.....	10946	9007	Decrease 1939
Fowls.....	24028	18975	Decrease 5454

Valuation Comparison for 1917 and 1918.

Class of Live stock	Dec. 31, 1917		Dec. 31, 1918		*Increase **Decrease
Horses.....	\$ 91.16	\$340482	\$75.47	\$300590	\$39892**
Mules.....	108.24	9505	83.76	8125	1380**
Beef cattle.....	50.53	334295	63.16	303315	30980**
Dairy cattle....	60.65	176618	66.69	222060	45442*
Sheep.....	12.69	461346	11.00	391595	69751**
Hogs.....	15.10	165240	15.12	136141	29099**
Fowls.....	.73	17612	.63	11948	5664**

The total decreased live stock valuation amounts to \$127,970.

The following table shows the farm distribution of live stock December 31, 1918.

Class of Live stock	1 to 5	6 to 10	11 to 20	21 to 30	31 to 50	51 to 100	Over 100	Over 1000	Total	Maximum on any 1 farm
Horses.....	238	179	67	10	9	1	0	0	504	100
Mules.....	28	1	0	0	0	0	0	0	29	6
Beef cattle.....	59	33	37	16	19	18	6	0	188	185
Dairy cattle....	220	70	50	14	11	6	0	0	371	90
Sheep.....	22	17	3	5	11	20	57	7	142	1800
Hogs.....	115	61	53	34	31	38	14	0	356	270
Fowls.....	4	2	15	73	120	104	13	0	331	200

There are 336 farmers carrying three or more classes of live stock.

The average number of live stock on project farms December 31, 1918 is as follows:

Class of Live stock.	Total Number	Average	
		with 906*	with 528**
Horses.....	3877	4.3	7.3
Beef cattle.....	4801	5.	9.
Dairy cattle.....	3330	3.6	6.3
Sheep.....	35607	39.	67.
Hogs.....	9007	10.	17.
Fowls.....	18975	21.	36.

906*--Total number of farms listed, according to water users cards, December 31, 1918.

528**--Number of farms actually showing live stock, according to the crop statistic cards, December 31, 1918.

Live stock shipped from project towns, season of 1918.

Carloads.	Cattle	Hogs	Sheep	Horses
Belle Fourche....	682	15	174	95
Fruitdale.....	28	3	23	0
Nisland.....	51	17	29	14
Newell.....	199	51	56	11
Total.....	960	86	282	120

The following table shows the carloads of live stock shipped on the project, season of 1918:

Carloads	Cattle	Hogs	Sheep	Horses	Total
Belle Fourche....	150	1	30	2	183
Fruitdale.....	1	4	0	0	5
Nisland.....	3	0	3	0	16
Newell.....	3	1	24	3	36
Total.....	167	6	62	5	240

Of the 150 cars of cattle unloaded at Belle Fourche, practically all were driven to the ranges North and West. Very few of these cattle found their way to project farms. All were grade beef cattle. Six carloads were taken to the farm of the Great Western Sugar Company to clean up beet fields and utilize surplus alfalfa hay. Two cars of these have been selected and placed in the feed lot where they are receiving ground barley, alfalfa, and dried beet pulp.

All of the hogs went to project farms. These were used as feeders in hogging down corn and were shipped out later as fat hogs. The importation of feeder hogs is being discouraged as much as possible because of danger of bringing in cholera.

Of the sixty-two cars of sheep, approximately half were unloaded at Belle Fourche. Most of these were carried to the ranges North and West. Those going to Newell were divided between the project and the range. A few of those brought to the project farms were feeder lambs and have since been shipped to market. One reason for feeder lambs and young ewes being bought on the Omaha market and shipped back was the reluctance of local sheep growers to part with their stock when an equal or better grade could be purchased at Omaha and delivered here for a much less total cost.

Two of the cars imported brought Corriedale bucks. Another car contained two pure bred and eighteen half blood Corriedale bucks. All of these were imported for breeding purposes.

My activities relative to stock population have been spent mostly in efforts at increasing the use of pure-bred sires. It was thought sufficient interest in pure-bred farm sheep was evident to

warrant the importation of a cooperative shipment of ewes and bucks. However, this proposition did not materialize. Indications warrant another attempt during the fall of 1918.

Suggestions are being given farmers at every opportunity relative to the disposal of scrubby light horses and the purchase of the heavy draft type. Comparisons of the sale price in both classes are being demonstrated and not without some beneficial effect. Many of the heavy draft horses are defective. The evidence is convincing that inferior breeding animals have been sold to unsuspecting farmers in this territory. Curbs, side bones, crooked limbs, spavins, and similar indications of defective breeding are quite common.

BREEDS AND BREEDING.

The following statement of pure breds of the various classes of live stock, is estimated rather than based on positive data. No systematic effort up to date has been put into effect to determine the approximate number of pure-bred animals. However, the assurance of the project manager has been given that this survey will be included when the crop census is taken at the close of the 1919 season. The writer is now preparing a card that will be used for this purpose and which, if properly filled out, should give a very fair knowledge of the total number of pure-bred live stock on the project.

<u>HOGS.</u>	<u>Sows</u>	<u>Boars</u>	<u>Young Stock.</u>
Duroc Jersey.....	100	200	300
Poland China.....	40	15	100
Chester White.....	50	24	100
Hampshires.....	5	5	15

<u>BEEF CATTLE.</u>	<u>Cows</u>	<u>Bulls</u>	<u>Young Stock.</u>
Hereford.....	30	50	25
Shorthorn.....	15	10	10

<u>DAIRY CATTLE.</u>	<u>Cows</u>	<u>Bulls</u>	<u>Young Stock.</u>
Holstein.....	125	45	100
Ayrshire.....	15	3	20
Jersey.....		2	

<u>RED POLLED</u>	<u>Cows</u>	<u>Bulls</u>	<u>Young Stock.</u>
		3	

<u>SHEEP</u>	<u>Ewes</u>	<u>Bucks</u>
Corriedale.....	10	60
Shropshire.....		15
Hampshire.....		2
Cotswold.....		50
Rambouillet.....	300	200

<u>HORSES</u>	<u>Mares</u>	<u>Stallions</u>
Percheron.....	10	10
Belgian.....		3
Shire.....	10	4
Grades.....		2
No Grade.....		6

The farmers are carrying over from 1 to 50 sows. The average would approximate five. The preference of breed at the present time is decidedly in favor of the Duroc Jersey. Occasionally a grade boar is found in service.

The use of pure-bred and grade stallions is about two to one in the favor of the pure-bred. There are more grade stallions used on the range than pure breds, hence the trashy animals annually brought in for shipment to central markets. A number of this kind of stock find their way to project farms every year.

The sheep business is rather new with project farmers, and there has been no concerted effort to improve the breeding. The importation of sixty pure-bred Corriedale bucks and twenty grade Corriedales, the latter part of the 1918 season is a step that, it is hoped, will stimulate improvement of the sheep industry. These have been used on a few herds of project ewes and on several bands of range ewes. The native sheep are a mongrel cross-bred type, many of which are very inferior individuals. A few of the more progressive sheep men are practicing systematic selection and with Corriedale bucks should obtain in a few years a very good type of sheep. Some opinion relative to the future sheep development will be formed during 1919 when the results of the use of the Corriedale bucks are available. Hopes are high, and from results acquired with them in New Zealand, there is no reason to feel pessimistic over what might be expected from their use here.

There is not a little interest in farm sheep. An effort to stimulate interest in the importation of a cooperative carload of Hampshires or Shropshires was made during November. Several farmers have recently inquired when such a shipment will be made. From indications a car may be brought in this fall.

The black face is not suitable for range purposes. Any black-face sheep brought in will be used only on project farms.

The appreciation of the pure-bred bull on the range is beginning to be manifested. A number of range men who were formerly satisfied to use a grade bull have recently bought pure-bred bulls. A number of these were bought at the Denver Show from the carload lots exhibited there and forwarded to this country.

One cooperative grazing associations on the Black Hills National Forest reserve recently incorporated in their by-laws, regulations prohibiting the use of grade bulls after 1920. The Forest Service will assist in enforcing this measure.

Occasionally a very scrubby bull is seen in otherwise good herds on the project. In two instances grade Holstein bulls were found in pastures with grade Hereford cows. Fortunately but few farmers practice

any such breeding methods as this. Those that do are generally found to be men coming from the mines at Deadwood or Lead to take up land on the project and have not had the opportunity of properly investigating the relative merits of beef and dairy cattle.

Duroc-Jersey hogs, Holstein dairy cattle, Hereford beef cattle and two types of horses, Percheron and Shire are the predominant breeds of the various classes of live stock represented.

The principal needs are a better appreciation of the pure-bred sire in all classes of live stock and a definite live-stock policy on each farm.

HERD IMPROVEMENT.

Systematic herd improvement has been practiced by only a few progressive farmers. The greater number have been content to let the development of their live-stock industry take a natural course. What improvement has been effected has been indirect and not because of any real effort on the part of most of the live-stock growers. However, most of the farmers appreciate the better class of live stock, but many appear to have a lack of appreciation of relative values when choosing sires.

A great deal of good has resulted from the short operation of a cow testing association. The qualities making a good milk cow have been so advertised that some sort of record is now requested when a farmer purchases a cow. The testing association failed after two years of operation. The reasons for this are: first, lack of concentration of dairy herds, second, frequent change of testers due to the general war conditions, third, inadequate financial support, fourth, petty jealousies and lack of cooperative spirit among the farmers.

Two farmers have realized the necessity of purchasing a testing outfit for their dairy herd. Their decision was influenced by a few tests conducted at their homes by the writer.

There are no live-stock clubs or organizations in operation. Interest is keen in a cooperative shipping association and this will shortly be perfected. Live-stock breeders associations will follow this movement. One farmer recently announced his intention to soon establish a herd of fifty head of pure-bred Herefords.

Six farmers have been assisted in the selection of pure-bred Duroc-Jersey foundation herds. Herd improvement will develop rapidly in the pure-bred breeding of swine. Three farmers were assisted in the purchase of pure-bred Holstein bulls for herd headers. No assistance has been rendered in the selection of Hereford bulls. Three farmers have been assisted in the purchase of pure-bred Shorthorn bulls.

FEEDS AND FEEDING.

Feeding practices are not methodical and are more or less haphazard. No records are kept in most instances of either feed, feed cost or weight of animals. Five feeding tests have been undertaken and some benefits are resulting. These have not been completed and the results will not be available for several months. Considerable difficulty is being experienced in getting the farmers to appreciate the necessity of having their hogs weighed at the close of the feeding test. Up to date several have carried their hogs to the station and shipped before weighing them. The results in so far as the feeding test is concerned are lost. There are several factors entering into the cause for this. These are: inability to get cars when desired; lack of telephone connections over the project; slowness of getting action through the mails; and the heavy snows preventing travel with the weighing crate and scales.

The idea of permanent grass pastures has not yet been instilled into the minds of project farmers. A few men have irrigated pastures but have no improved grasses. One farmer recently called at the office and suggested he had grazed sixteen cattle all season on a ten acre irrigated pasture. This is in keeping with the results obtained at the Experiment Farm at Newell.

Root-crop production for live stock consumption is not extensive. Mangels do very well in this locality and there is no good reason why more are not fed. On Mr. Smiley's Weskota farm, when Holstein cattle are put on production tests, mangels form one of the important feeds.

Pasture following the harvesting of the sugar beets is valued at \$10 per acre. On the sugar company's farm the pasture following sugar beets is given a credit value of \$7 per acre. In cases where beet growers have no live stock to run on the beet fields, they experience very little difficulty of disposing of their pasture at from \$7 to \$10 per acre. Sheep seem to show the best results from such pasture.

Four carloads of dried sugar beet pulp were shipped to the Belle Fourche Valley during the 1918 season. Two of these were purchased by the Weskota Farm for use of the pure-bred Holstein cattle and for sheep feeding. The Great Western Sugar Company used the other two for cattle feed. The appreciation of this by-product as a feed is being shown by the increased purchases for 1919 feeding operations.

The use of barley as a feed is increasing rapidly. A number of grinding mills have been purchased by farmers during the past season. Ground barley is being fed principally to hogs and sheep. However, it combines splendidly with oats as a horse feed in the proportion of two parts of oats to one of barley. Wheat is, in a few instances, being fed to hogs. The Food Administration allowing this where the grain was excessively cracked during the threshing operations.

Shorts as a growing-pig feed is used by a few farmers. At the present time, however, the price is prohibitive. While the Food Administration controlled the wheat industry the shorts available were mixed heavily with bran. This by-product retailed at \$26.00 a ton during the latter part of the season.

Average price per hundred paid for wheat at local mills was \$3.00.

The average cost of mill products feeds and grains was as follows per hundred pounds: Bran \$1.50; bran and shorts \$1.55; barley \$2.00; oats \$2.25; corn in the car \$3.00; alfalfa in stack \$9.00 to \$14.00 per ton according to quality; and dried beet pulp \$50.00 per ton in the car.

Grinding of grain at the elevators costs from 9¢ to 12¢ per hundred. Most of the grinding is being done by the farmers, with their own mills.

Cooperative grazing, while practiced to some extent, is not the result of any organized effort. A few of the farmers club their stock together and send them out on the range with a herder. They prorate the expenses. This is done with sheep and cattle. Some definite figures will be at hand for this kind of grazing by the end of the coming season. Losses due to coyotes and parasites were extensive during 1918, amounting to over ten percent of lamb crop in most bands of sheep. Where losses were suffered due to strayed or stolen sheep, the total loss amount to approximately 15 per cent of the bands.

Hog feeding practices will improve more rapidly than in any other class of live stock. The results can be demonstrated much more easily. A number of citizens have indicated their desire to carry on some cooperative feeding tests next year. Tests will be carried on in hogs, sheep, and cattle.

In the past, sufficient attention has not been given the proper graining of hogs on alfalfa pasture. Some splendid experiments illustrating this principle have been completed at the Experiment Farm at Newell. These results have been carried to many farmers and should be productive of beneficial results. The use of self feeders is increasing rapidly among hog growers.

The principal requisite for accomplishing improvements in feeding methods is the establishment of a platform scales on every farm.

The following additional requisites are considered essential to the accomplishment of improved feeding methods: Increase of the production and use of barley as a grain ration for hogs, sheep and horses; appreciation of the proper amount of grain necessary for hogs on alfalfa pasture coincident with their best growth and development; appreciation of and the growing of more root crops for dairy cattle; and provision for a sufficient quantity of water at all seasons of the year.

EQUIPMENT.

Building equipment is rapidly improving. Recently, while making a trip over the project, the number of new buildings being erected were counted. Fifteen modern farm buildings and a few temporary sheds were being built. Of the fifteen modern buildings all but three were sheep barns and sheds. Gradually good buildings are replacing the temporary makeshifts, the usefulness of which

have been outgrown. Modern homes generally follow the modern barn, though occasionally a good farm home precedes the live stock building construction. Sheds are being used largely by the sheep growers. Modern hog buildings are replacing the straw pile and straw covered frames. Wind-breaks are being planted where no natural protection is afforded. Cottonwood, Carolina poplar, Russian Olive and pine trees are being used for this purpose.

Four Hinman milking machines are in operation and giving satisfactory results. Of this number two are run by electricity and two by gas engine power.

There are several unorganized cooperative shearing associations in operation. Several farmers, in many instances the same ones interested in the cooperative grazing activities, are likewise cooperating in their shearing operations. There are two outfits operating ten machines and shearing approximately two thousand to three thousand a day each. The dipping plants are generally operated in conjunction with the shearing plants. The farmers with the small bands depend on driving through the dipping plant when sheep are on the way to the range. Those that have no range away from the project depend on some neighboring vat for dipping facilities. No extensive cooperative effort in this line has been attempted.

Silos are not increasing as rapidly as their usefulness would merit. Corn for silage is not grown generally. There are approximately twenty-five silos on the project. In a number of instances they have not been filled. The reason perhaps may be in the fact that many men having them have changed their live-stock industry. Former dairymen have purchased sheep and now get along without the silo. Some have taken up the beet industry to the exclusion of any major live-stock industry.

There are three types of silos on the project. Eit, superstructure and a combination of the two. The pit silos are concreted. The superstructure silos are stave and the combination silos are half in the ground, which is concreted, and half out which is stave. Occasionally difficulty is experienced in the combination silo because of the leakage of air at the surface of the ground. Much silage is frequently spoiled thereby.

The writer's activities with reference to farm equipment has been mostly in the way of suggestions relative to the provision of farm scales, self-feeders, babcock testers, and proper sanitary improvements and water systems.

One of the greatest handicaps to the industry is the watering facilities during the cold winters. A large number of farmers do not have wells. Those that have complain of the strong alkalinity of the water. Many of the farmers are building cisterns in which they place ice, which in the summer is used for water for home use. In the summer time water from the irrigation laterals is used for stock water.

In a conversation recently with the engineer of the project, the problem of a satisfactory plan of winter water supply was discussed. The only system that seems practicable is one in which the water is piped from the bottom of the deepest part of a pond or reservoir, under the dam, below the frost line, to a trough at the base of the dam. The water to be controlled by a hydrant and a deep seated pipe drain

which also is below the frost line. Plans of this system will be made and if found workable, one will be put in and tried.

DISEASE, PESTS AND MINOR AILMENTS.

The average settler on the project having no previous farming or live-stock experience did not at first take into account the losses due to various causes in his live-stock operations. The first few years very little disease loss was experienced. This was due in most part to the practically germ-free condition of the surroundings, the land being new when opened for settlement. The live-stock industry at first flourished and was an extraordinarily profitable one. However, as trading in live stock began, and the disease germs and parasites became disseminated, losses began to occur. Discouragement in the production of the offending class of live stock followed, and frequently when opportunity offered this class was disposed of. In some instances depreciation of values assisted. It is presumed that a great deal of the shifting from one class of live stock to another has been due to discouragement brought about by losses from disease. Especially is this true with farmers handling hogs and sheep.

Most of the farmers have come to appreciate the fact that they must anticipate certain losses from various causes and that a great many of them are preventable.

Cholera has not yet made its appearance upon the project or in the Belle Fourche Valley. Every effort is being made to prevent its ever gaining access to this district. One local representative in the legislature, a practical live-stock man and formerly Secretary of the State Live Stock Sanitary Board, is doing everything possible regarding the promulgation of preventative measures to be enforced in this district.

The past year was an especially severe one due to the depredations of predatory animals. A loss of 10 per cent in the lamb crop was reported by a large number of sheep men due to the activity of coyotes. Some loss was due to dogs. In this connection, arrangements have recently been completed with the Bureau of Biological Survey whereby a hunter has been allowed this territory to assist in the control of predatory animals. The only objection to the proposition is the total inadequacy of the assistance. There is work for three experienced hunters. It is hoped that more can be allowed this section next fall.

Anthrax destroyed approximately 20 head of cattle in two herds before effective preventative inoculation was completed. One herd contained over 1000 head, necessitating two days to complete vaccination.

Two hundred and fifty head of pure-bred and grade Holstein cattle have been tested for tuberculosis during the past six months, preparatory to being placed on the accredited herd list. Of this number 26 reacted. All but ten have been slaughtered. These ten are valuable breeding animals and will be retained for breeding purposes. They will be kept segregated from the rest

of the herd. Of the 16 head that were slaughtered, four were condemned as unfit for food.

Contagious abortion among cattle is not serious in this section. No losses in the calf crop have been reported during the past season.

Goiter has never been found in live stock in this vicinity.

Necrobacillosis is quite prevalent and in some herds is a very serious factor. One farmer overstocked with brood sows suffered a loss of over 30 per cent in pigs this fall and winter. This farmer had 60 sows bred to farrow from October 15 to January 1. Pigs, when they began to come, were soon all over the place. He had no assistance in caring for them and too many were allowed together. Cold weather set in, intestinal necrosis developed and a third or more of his pigs died. At one time ninety dead pigs were carried out. This gentleman has seen his mistake. He has since purchased a few pure-bred sows and gone into the pure-bred business on a small scale.

Ten investigations of diseased pigs were made, and in every instance the results of infection due to the necrosis germ was plainly evident. Demonstrations in control and prevention were given.

Lice on cattle and horses have been causing considerable trouble during the winter. In several instances spraying machines were in operation during the month of January. Suggestions relative to means of treatment and products to be used have been given to a number of farmers. Lice are quite effectively controlled among the hogs. Some suggestions as to best methods of oiling hogs have been given.

Bloat due to grazing on alfalfa takes its annual toll. One sheep man suggested that the loss from bloat would not approximate the loss on the range due to the various causes, and that he would continue to take his chances with the alfalfa pasture and have his sheep at home.

Losses due to the various diseases are not excessive on the project farms. An effort has been made to increase the number of veterinarians on the project in order that service may be available at any time.

PRODUCTION AND MARKETING.

Following is a list of crop products, live stock and live-stock products marketed from the Belle Fourche project during 1918:

	<u>Carloads.</u>
Wheat,	175
Mill products,	29
Oats,	1
Other grains,	4
Potatoes,	27
Cattle,	960
Hogs,	86
Sheep,	282
Horses,	120
Hay,	301
Sugar beets,	470

Total tonnage of sugar beets.....17,512
 Total value " " "\$157,603
 Wool marketed through Belle Fourche project
 warehouses totaled 1,527,003 pounds.
 Dairy products:
 Amount of butter-fat bought, pounds, .519,465
 Value of " " "\$234,035.
 Milk bought, pounds, 86,258
 Cream " "535,289
 Ice cream manufactured, gallons, 7,439
 Butter " ,pounds, 221,150

The average price paid for butter-fat during the year, by quarters, was as follows: First quarter, 49.7 cents; second quarter, 42.75 cents; third quarter, 45 cents; last quarter 59.5 cents per pound.

Cream is marketed through the cream stations at Newell and Nisland, and thence shipped to either Omaha, Nebraska, or Mitchell, South Dakota, the creameries represented, or is marketed directly to the Belle Fourche Creamery at Belle Fourche. The Belle Fourche Creamery has but one cream station on the project. This is at Arpan. This creamery pays a premium of 2¢ per pound for cream throughout the season over what is paid by outside cream stations.

Unorganized cooperative live-stock marketing is practiced to a limited extent among the project farmers. A movement is now on foot to organize a cooperative live-stock shipping association. It is expected this association will be perfected in time to market the 1919 crop.

Alfalfa is generally sold direct to buyers on the ground, who take it in the stack and bale or grind it. During the fall months a buyer from the eastern markets had four balers and a mill in operation at one time. This buyer paid from \$9.00 to \$14.00 per ton. Those that shipped direct to nearby markets received \$20.00 f.o.b. cars at local stations for baled hay.

Rumors supposedly emanating from the offices of the sugar beet company are to the effect that a sugar factory will be constructed at Belle Fourche in time to handle the 1920 crop. This information, however, is not to be depended upon.

Hogs marketed during the fall months averaged approximately 16-1/2 cents a pound, a number of cars selling as high as 18-1/2 and 19¢. One farmer marketed two cars at 20¢ f.o.b. Nisland.

Alfalfa-pastured, cholera-free hogs make splendid feeders and the demand for them is rapidly increasing. A new and nearer market has been located in the eastern part of South Dakota. It is planned, through the cooperation of the growers and the eastern feeders, to run feeder hog specials of fifteen cars each to eastern South Dakota in the fall of the year in order to eliminate the feeding bill, cut down the shipping rate, and reduce delays in transit as well as prevent exposure to cholera by being forced to go through the regular stock yards. By arranging fifteen cars

in a train the railroad will run a special through stock train in 36 hours. The difference in freight rates from Newell to Omaha and Newell to Brookings is $4\frac{1}{2}$ a hundred pounds. The minimum car is 17,000 pounds. This will be considerable saving to the feeder. He can well afford to pay the project farmer a premium for cholera free, alfalfa pastured hogs. He will thereby avoid expense of vaccination, which he incurs at the central markets and in addition avoids a three or five-day feed bill.

RELATIONSHIP TO OTHER LOCAL INDUSTRIES.

The only industries to which the live-stock industry can be considered related and which in any way materially concern it are: the beet sugar industry; elevators and flour mills, and alfalfa mill. These are all related industries, and, so far as is now judged, are helpful to the industry rather than injurious. In fact, each one is stimulating to the other and as the district develops they should become more and more correlated and interdependent.

COOPERATION.

There have been no new cooperative enterprises projected during the past year. One enterprise, a cooperative cow testing association, failed during the latter part of the season of 1916. This association was in operation two years. The reasons for the failure were: (1) individual herds distributed over too large a territory; (2) frequent change of testers due to war conditions; (3) inadequate financial support; and (4) petty jealousies and the lack of cooperative spirit among the farmers.

Unorganized cooperative sheep grazing associations have been in vogue for a number of years. A few farmers club their sheep together, hire a herder, and send them either to their own or leased grazing land. Occasionally the sheep range onto property of some settler and trouble results, but in most cases these grazing operations are quite successful. The exact data of the many grazing arrangements are not at hand. There is considerable variation in the conditions under which each operates.

South of the project are three large cooperative cattle grazing pastures. One farmer operating such a pasture receives $75\frac{1}{2}$ ¢ a head a month. The territory is all fenced and is located on the bank of the Belle Fourche river. The project farmers drive their cattle to the pasture in the spring and assist in bringing them back in the fall. One thousand head were pastured within this pasture during 1918. They have no insurance system to cover losses, a fatal weakness of the organization. Last summer anthrax started in this herd and eight were lost before effective measures were completed to prevent further loss. In three instances the losses fell upon individuals who could not well afford to stand it. A system of insurance would have added materially in each case. As a result, three of the project farmers have disposed of all their beef cattle and have taken up the production of farm sheep and hogs.

The farmers in the Vale district have for some time conducted informal cooperative shipments of hogs. These shipments would as a rule not include over four or five producers. A live-stock shipping association will be in operation in this district by the latter part of 1919.

Requests have been received relative to the organization of a cooperative wool pooling association. There are a great many phases of this proposition that are not yet clear and there is some doubt if any definite results will be attained this coming year.

There are a number of informal cooperative sheep shearing and dipping plants in operation. Some on the project and some on the range. Most of them operated by project farmers. The expense is prorated.

There is some discussion relative to the organizing of a cooperative alfalfa grinding association. One large mill owned and previously operated by a company at Belle Fourche is not running and is offered for sale. Several farmers have brought in hay during the season and with the cooperation of neighbors, also wishing to grind hay, have run the mill to the satisfaction of all concerned. It may be the beginning of a cooperative association.

There are several cooperative threshing outfits in operation over the project. One outfit owning its own building and equipment near Vale did not operate this past season. No definite data are available regarding the system of operation or the reason for its failure, if it has failed.

A farmers' cooperative store is in operation at Nisland. From all indications it is operating successfully.

Several meetings have been held by a number of farmers recently relative to the organization of a cooperative elevator company at Nisland and Fruitdale. No definite data are available relative to the extent of the organization.

Considerable effort was spent in an attempt to foster the importation of a cooperative shipment of farm sheep to the project. Several inquiries have been recently received regarding this proposition and from indications a car may be brought in this fall. Hampshires or Shropshires are being considered.

An attempt to get the Holstein breeders together has just been made. It was the intention to organize a Holstein Breeders' Association but up to date the interest is not keen enough to insure its life, hence, the proposition will be dropt for the present.

An effort to have all dairy herds on the project tested for tuberculosis is being made. Up to date all but a very few of the large herds have been tested. When the Bureau of Animal Industry begins its circumscribed area work, an effort will be made to have a local inspector located on the project. If this comes to pass, a concerted effort will be made to have all cattle tested for tuberculosis and the pure-bred herds placed on the accredited list in due time. This will necessitate cooperative effort on

the part of the farmers producing cattle.

FUTURE DEVELOPMENT OF THE INDUSTRY.

Every present indication suggests a rapid improvement in the live-stock industry. The cooperative live-stock shipping and wool marketing features now in stage of development should prove very stimulating factors in hog and sheep production. Through these organizations the farmers will automatically come to appreciate the advantage of marketing uniform products. To grow uniform live-stock necessitates live-stock breeding organization. Organization of this kind is now being agitated. It is expected in the very near future to complete organization of a cooperative shipping and wool marketing association.

The outstanding requirement is the breed improvement. The best means of reaching the settlers of foreign birth is through their children. Hence, there exists a peculiar need of the organization of boys' and girls' live-stock clubs. Unless a county agent is employed soon an effort at organizing some clubs will be made.

W E E K L Y B U L L E T I N

Of the Offices of

WESTERN IRRIGATION AGRICULTURE and DEMONSTRATIONS ON RECLAMATION PROJECTS

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Western Irrigation Agriculture.

Field Notes.

Huntley.

The maximum temperature for the week ending April 19 was 79, minimum 24, and precipitation .24 inch.

Weather conditions continued favorable for field work during the past two weeks and good progress was made in preparing land and seeding grains in the rotation plats.

Alfalfa with oats as a nurse crop was seeded in all of field B-VI. A mixture of grasses for permanent pasture with oats as nurse crop was seeded in a plat of 2.25 acres in field A-V (orchard). As a result of the light rainfall during the past winter and up to date this spring, the soil is exceptionally dry and in many of the fields the grain is coming up unevenly. This dry condition has resulted in some slight damage in some cases from soil drifting.

Newlands.

Wheat was planted during the week ending April 19 on H 5, 6 and 7 and alfalfa drilled in after the wheat. Acid phosphate was drilled in with the wheat on the west half of plats 5 and 6 at the rate of 260 pounds per acre. The east half of these checks received no treatment.

Plats D 1 and 5 were plowed and harrowed in order to kill the alfalfa that was starting to grow.

On the 15th the first rows of the time-of-planting test of potatoes was put in on plat H 3. Weekly plantings will follow.

Barley was planted in B 5, 6, 7 and 8 and plats B 1 to 8 inclusive were seeded to sweet clover. Plats C 6, 8, 10 and 12 were planted to scarified sweet clover seed, and plats C 7, 9, 11 and 13 to unscarified seed.

Mangels were planted in rotation plats D 5 and E 7 and 8. Six double rows of two varieties of Canada field peas were planted in A 3.

The following plats were irrigated during the week: Y 1 to 23; F 1, 2, 4 to 14 and 16; H 11, 12, 13, 16 to 24; A 1, 2 and 3.

The orchard fields A 1 and 4 were cultivated and hoed.

San Antonio.

During the week ending April 19 the maximum temperature was 85, minimum 39, and the greatest daily range 40. Some of the nights were quite cool, but cotton germinated well and other crops made good growth. Oats have fully headed. Rust is very bad on some of the plats where selections and varieties were seeded, but is not serious on the rotations.

The remainder of the corn on the rotation plats was thinned. Corn in the variety test and in the wide-and-narrow row test on C5 was thinned. The corn in the experiments conducted by the Office of Corn Investigations was given a preliminary thinning. Grub worms are still doing a little damage, especially on C 5 and the lower end of B 6.

Mr. Davidson, in charge of the work of the Office of Crop Acclimatization and Cotton Breeding at this station, made the following experimental plantings of cotton: Lone Star on C 6 for cultural work, breeding, and seed increase; a variety test on B 4 for comparing Mebane's Triumph, Acala, Kekchi with Lone Star; a co-operative series on C 3, including 23 varieties representing different types of cotton grown in the United States; Acala on A 1 for breeding; Acala on Ab8 for seed increase.

The landscape gardener at Kelly Field is starting some Bermuda grass about the grounds there. He is obtaining sod from the farm and some assistance in the way of plowing up the sod has been given him.

Salvia hispanica, or chia seed, sent out by the Office of Drug-Plant Investigations, was sown in the nursery on A 3 April 18. It was sown in four-foot drills and in eight-inch drills.

The sorghum varieties on C 4 were cultivated for the first time.

Part of the rotation corn and milo plats were weeded. Orchards A1 and B3 and the nursery were weeded. Lawns were mowed and weeds cut. The land on A 3 where Rhodes is to be sown was disked.

During the week ending April 26 the maximum temperature was 85, minimum 53, and the greatest daily range 28. The weather continued dry with moderate temperatures. None of the crops appears to be suffering from lack of moisture but cotton recently planted is not coming up well. Though put down to moist soil, it was not covered very deep--perhaps about one inch. In many places it has dried out until the seed has not germinated at all. To get a uniform stand on all plats it will probably be necessary to replant.

A good deal of time was spent in weeding on the rotations, about the grounds and in the pomegranate orchard on C3. Soil samples were taken on the oat plats. The rotation milo was thinned. Mr. Davidson planted Kekchi cotton on the Herbst field and some miscellaneous cottons on F3.

Yuma.

Leveling of new lands in series D continued during the week ending March 22. Roads and borders were hoed. Orchard, grape vines, and shrubbery were sprayed.

Nine varieties of tomatoes, totaling about 400 plants, were set out on plat A-15-4.

The maximum temperature for the week was 85°, minimum 32.5°, greatest daily range 43°, and precipitation .28 inch.

Land to be planted to cotton was irrigated the first part of the week ending March 29. The irrigation system was repaired and roads and borders hoed.

The following plats were planted to cotton:

Plat Number	Variety	Method of Seeding.
C-26	Pima	Bed & Furrow, single stalk
C-27	"	Level seeding, in rows 44" apart
C-28	"	Bed & Furrow, open thinning.

The maximum temperature for the week was 83°, minimum 41°, and greatest daily range 37°; rainfall .20 inch.

During the first part of the week ending April 5 the orchard and ten acres of fallow were irrigated. Plats C-26 and 28, which were planted to cotton the previous week, were also irrigated.

Plat E-1 was planted to Pecans. All nursery stock was cultivated and garden crops hoed.

The maximum temperature for the week was 92°, minimum 45°, and greatest daily range 44°.

The following crops were irrigated the first of the week ending April 12: first-year alfalfa, barley, wheat, flax, fig orchard, pecans, deciduous orchard, melons, and pomegranates.

Ragi millet was planted on plats E-5 & 6, Sudan grass on plat E-7. Sweet potatoes were planted on A-15-2.

The following varieties of cotton were planted in Series C:

Yuma (continued).

Variety	Plat No.
Okra.....	C-20-A
Durango--Commercial.....	-B
Durango #18.....	-21-A
Kekchi.....	-B
Durango #18.....	-22-A
Tuxtla.....	-B
Durango #18.....	-23-A
Rowden.....	-B
Durango #18.....	-24-A
Lone Star.....	-B
Durango #18.....	-25-A
Acala.....	-B

Plats A-23 and 24 were used as Durango Progeny and increase blocks. These plats were planted April 10 to the following progenies:

Plat No.	Row No.	Number of Progeny		
A-23	1 to 10	#18-D-12-0		
"	11 to 20	#63-D-6-0		
"	21 to 32	#18-C-2-0		
A-24	1 to 4	#18-C-2-0		
"	5 to 7	#25-D-1-0		
		East End	Middle	West End
"	8	#25-D-1-0	#25-D-1-0	#25-D-1
"	9	#18-D-1	#18-D-6	#13-D-1
"	10	#18-D-2	#18-D-7	#13-D-2
"	11	#18-D-3	#18-D-8	#63-D-1
"	12	#18-D-4	#18-D-9	#63-D-2
"	13	#18-D-5	#18-D-10	#63-D-3
"	14--23	#18-D-7-0		
"	24--32	#18-D-11-0		

Five thousand pounds of Egyptian cotton were delivered to the gin at Winterhaven. This cleans up all the 1918 cotton crop.

The first cutting of alfalfa is being harvested this week

The maximum temperature for the week was 91°, minimum 41°, and greatest daily range 43°.

During the week ending April 19 twenty-nine head of sheep, including wethers, ewes, and lambs, were borrowed for pasturing ditch banks on the farm. Using sheep in this manner has many advantages. The Bermuda grass is utilized as a pasture grass; the

Yuma (continued).

ditches and laterals silt up more slowly when the sides and bottom are kept free from a rank growth of grass and weeds, and the appearance of the farm is greatly improved.

Owing to the difficulty in securing pigs for alfalfa pasture, this experiment has not as yet been started. Arrangements are being made, however, to have this work under way within the next week. As hogs are unusually high and scarce on the project, it has been necessary to borrow pigs for this work.

The small bag of Chia seed (Salvia hispanica) sent out by the Office of Drug-Plant Investigations, has been planted in plat A-13-5. Part of the seed was broadcasted and the remainder planted in rows.

During the week the following plats were planted to cotton:

TWO ROWS COTTON--ONE ROW COWPEAS--TEST

Plat Number	Variety	Method
A-1-A	Lone Star	Every 3rd row blank
-B	" "	Check plat, all rows seeded
A-2-A	" "	Every 3d row uninoculated cowpeas
-B	" "	Every 3d row inoculated cowpeas

The cowpeas are to be planted about July 1st and turned under as a green manure.

COOPERATIVE SERIES.

Plat No.	Row No.	Variety.	
		East half	West half
C-32	1	Durango #18	Trice
"	2	Acala	Winesap
"	3	Express	King
"	4	Kekchi	Cleveland
"	5	Durango	Ideal
"	6	Columbia	Toole
"	7	Foster	Askew
"	8	Snowflake	Dixie
"	9	Meade	Sproull
"	10	Sea Island	Triumph
"	11	Pima (Egyptian)	Rowden
"	12	Okra	Lone Star
"	13	Garro Hill	Half & Half

Yuma (continued).

FERTILIZER TEST

Plat Number	Variety	Fertilizer
A-3-A	Lone Star	Check--No fertilizer
-B	" "	0%P--0%N--3%K
A-4-A	" "	0%P--3%N--0%K
-B	" "	Check--No fertilizer
A-5-A	" "	0%P--3%N--3%K
-B	" "	0%P--3%N--3%K
A-6-A	" "	Check--No fertilizer
-B	" "	9%P--3%N--0%K
A-7-A	" "	9%P--0%N--3%K
-B	" "	Check--No fertilizer
A-8-A	" "	9%P--0%N--0%K
-B	" "	Cotton seed meal
A-9-A	" "	Check--No fertilizer
-B	" "	Parnyard manure

These commercial fertilizers were applied at the rate of 500 pounds per acre, the phosphorus as acid phosphate, the nitrogen as sodium nitrate, and the potash as potassium sulphate.

TUXTLA PROGENY AND INCREASE BLOCK

Plat Number	Row Number	Number of Progeny		
E-2	1--6	20-19-5		
"	7	East End	Middle	West End
"	8	23-1-5-4	20-19-5-6	20-19-5
"	9	23-1-5-2	20-19-5-5	20-19-5
"	10	23-7-2-4	20-19-5-10	44-1-6-1
"	11	23-7-1-3	20-19-5-7	12-1-Bulk
"	12	23-7-2--Bulk		12-1-Bulk
"	13		23-7-2-Bulk	
"			23-7-2-Bulk	

Demonstrations on Reclamation Projects.Field Notes.

Belle Fourche.

Mud and bad roads prevented travel by automobile on the project during the week ending April 19.

Belle Fourche (continued).

Six office conferences were held.

Friday and Saturday were spent at Newell making arrangements to organize the boys' and girls' live-stock clubs at that place. Conferences were held with the principal of the school, the cashier of the First State Bank, Miss Rongstad, Club leader, and others.

Arrangements were made for one farmer near Belle Fourche to rent grazing land on the forest reserve. He expects to graze 150 head of grade Hereford cows.

The first part of the week of April 26 was spent in getting out two circular letters. One to the Newell boys' and girls and the other to breeders of pure-bred live stock in Butte county.

The letter to the young people was one explaining the workings of the boys' and girls' live-stock clubs. Also suggestions of financing offered by one of the banks of Newell.

The other letter was one explaining to the pure-bred breeders the benefits of a Black Hills breeders' association, taking in six or seven counties in this end of the state.

On Thursday of the week a conference was held at Nisland with the manager of the Farmers' Cooperative Store. The object was to determine the advisability of starting a movement to organize a cooperative shipping and wool marketing association at this point. A conference was held with the cashier of one of the banks at this point on the same subject.

Friday of the week a conference was held with the County Agent of Lawrence County regarding the cooperative Shorthorn sale to be held there and to inspect the animals offered for sale. Also to confer with the agent regarding the promotion of the Black Hills breeders' association.

Saturday at Newell a boys' and girls' "Baby Pork Club" was organized. Those assisting in this work were a state club leader, Mr. Aune of the Experiment Farm, the principal of the schools, the cashier of the First State Bank, and Mr. Aicher.

A meeting of the directors of the Vale Shipping Association was held Saturday to make arrangements for a warehouse in which to handle and store their 1919 wool clip preparatory to shipment. Also a meeting of approximately 100 citizens was addressed on boys' and girls' live-stock clubs. Arrangements were made for a meeting of the young people in this district to organize pig clubs.

Four farm conferences were held during the week.

Huntley.

During the week ending April 26, thirty farm visits were made and 21 calls for assistance received. Ten farmers called at the office.

On that part of the project known as the Highline, a large part of the farmers are located so far from a shipping point as

Huntley (continued).

to seriously interfere with the growth of dairying. The cooperative cheese factory at Ballantine needs more milk than it is getting. It has been thought that the situation might be improved in both respects by starting a milk route. Some time was spent with the manager of the factory trying to learn the views and wishes of milk producers, but sufficient information has not yet been obtained to justify a conclusion.

A stock judging demonstration was given at Worden, 29 samples of milk were tested, 3 live-stock owners were advised regarding animal diseases, and the calves on three farms, 15 in all, were vaccinated against blackleg.

During the week ending May 3, twenty-eight farms were visited, and 18 calls for assistance were received.

About half of the calls for assistance were in regard to diseases of farm animals. In 10 instances advice or assistance was given.

The agricultural classes at the Anita, Garnsey and Ballantine schools were given help in the way of preparation for the final stock judging contest.

Four hog producers were given assistance toward the disposal of pure-bred pigs to be used by the boys' and girls' pig clubs in Yellowstone county, but not on the project.

Much interest in the welfare of the Ballantine cheese factory has been evident, but the situation remains about the same. It is to be hoped that the agitation will result in a plan that will bring an improvement.

Thirty calves were vaccinated against blackleg.

Minidoka.

There were 22 calls at the office during the week ending April 19, twenty-six farm visits were made; 18 phone calls for help were received; 1 pure-bred Holstein cow was selected for a beginner in the dairy business; 3 new calf club members were secured for the Cassia County Calf Club; 90 circular letters were sent out with reference to the dairy meeting which was held at Rupert Saturday night; 1 meeting addressed with an audience of 125; 5 men were selected in Minidoka county and 6 in Cassia county to take part in a hog demonstration which will be carried on during the summer. Hogs will be turned out on alfalfa and have this ration supplemented with a small-grain ration. Monthly weighings will be made in order to determine just how much they will gain under the conditions on the project. This work is being carried on all over the State.

The dairy and silo meeting which was held at Rupert High School, on Saturday evening, was especially well attended and the audience was interested in the subject.

Minidoka (continued).

A meeting was held on Monday of the week ending April 26 at Paul for the purpose of investigating the possibilities of re-organizing and starting the Paul Cheese Factory. A committee was elected to make a canvass of the community and to make arrangements with the local bankers for the financing of the purchase of cows and to set a future date for another meeting to decide just what should be done.

During the week much interest has been shown in the development of the factory and in all probabilities arrangements will be made in the near future for the purchase of a number of dairy cows.

Thursday evening, Mr. Rinehart was here and addressed a meeting of wool growers at the farm bureau office and the consensus of opinion was that the farmers of Minidoka county should pool their wool. A committee of three members was elected to investigate the possibilities of securing a warehouse, and one of this number was chosen to act as manager for the pool.

One day was spent with the members of the Cassia County Calf Club securing data and suggestions from the members as to what sort of breeding they wished for their club. Every indication is that this venture will be a success and no doubt the stock will be purchased some time during May.

Newlands.

During the week ending April 20 there were 37 calls for assistance and 17 farm visits were made in response to calls.

The general subject of herd management demands considerable attention at this time of the year. Various difficulties incident to the time of calving, lambing, and farrowing are matters of considerable concern to ranchers, who are limited in their experience with live stock, and assistance and advice at this time is essential and much appreciated.

The prevailing high prices for butter fat throughout the winter and spring has served to stimulate herd testing. Several herds of the valley are being regularly tested by this office. Herd testing was done for four herds during the week.

The situation as regards the marketing of alfalfa hay has very materially improved during the past four weeks. There is a constant stream of wagons coming into town with baled alfalfa hay for shipment and loose alfalfa hay to be converted into alfalfa meal. The local alfalfa meal mill is running 24 hours a day now, and shipments of alfalfa meal are being made to Missouri River points.

A second alfalfa meal mill is under construction at Fallon. This mill is being erected by the Western Meat Company, and it is expected that this second mill will be in operation very soon. After this year there will no doubt be a constant and steady sale for alfalfa hay.

North Platte.

During the fore part of the week ending April 12 the roads in the valley were in very bad condition because of the snow storm of Sunday and Monday of that week. The first two days of the week were spent in the office outlining the plans for the dairy exhibit, and the cattle show at the County Fair this fall.

The last four days of the week were spent in the field. Two farms were visited and the hogs inspected for cholera, but no cholera was evident. Several farms were visited in regard to general dairy work and the erection of silos this summer. At the present time there are a number of farmers on the project talking of building silos this season and the prospects look good for a considerable increase in the number of silos this year.

During the week ending April 19, twenty farms on the project were visited for general live-stock work and fourteen farms were visited at the request of the owners. One farmer was assisted in selecting four pure-bred gilts from a neighbor's herd to be kept for breeding purposes. A number of farms were visited for the purpose of interesting men in getting in some pure-bred Holsteins at this time to be shipped with two pure-bred cows for the experiment station. The probabilities are that at least 4 or five pure-bred Holsteins will be brought to the project in the near future. Arrangements were made on two farms to put in sufficient corn acreage to fill a silo on each farm this fall. The plans are now to put up concrete silos.

On Tuesday of the week ending April 26 a trip was made by auto up into Sioux County, about forty miles, with one of the farmers on the project who is breeding registered Herefords. Two herds of cattle were visited and at one place two very fine cows were bought at a cost of \$1,100. This man lives on the project and has some dry-land pasture north on the dry land.

Four days of the week were spent with Professor D. H. Propps of the State Agricultural College in visiting dairy farmers of the valley. Plans were made for Professor Propps to select 5 pure-bred Holstein cows at a sale to be held in Omaha May 1. Two of the cows will go to the Experiment Station here and the others to farmers on the project. The Experiment Station recently purchased a registered Holstein bull which will be used on the two-year-old heifers at the station. One of the farmers on the project left Saturday night for Sweetwater with Professor Propps to look at a herd of 15 pure-bred Jerseys for sale at that place. If these cattle are bought this man will put up two silos this summer, one for a winter silo and the other for a summer silo.

Umatilla.

Owing to the prevalence of cold dry weather during the month of January there was very little activity in land development. A few settlers kept busy making heavy cuts where the surface was kept loose

Umatilla (continued).

by frequent plowing to break up the frost.

During the last half of the month the number of calls for assistance in planning campaigns for spring work increased materially. Thirty-four farm visits were made for this purpose and to lay out ditches, etc.

No snow fell on the project, and only four inches in the mountains. At the close of the month it began to appear that the supply of irrigation water from the Umatilla River might be very short which would directly influence the Umatilla project.

Soon after the first of February frequent rains occurred and the snow increased in the mountains from four inches to four feet in depth. This practically insures a liberal supply of water for irrigation purposes.

The entire month of February was favorable for land development work and 57 farms were visited on request to lay out ditches, to lay plans for development work and to otherwise help them with their farm problems. Much farm work was accomplished.

Development work is unusually active for this season. The supply of straw and covering material was very short and most farmers prepared land and sowed immediately to rye endeavoring to get sufficient growth on it to hold the land so that alfalfa could be sown in April or May.

Favorable weather for land development prevailed during March. Frequent showers and very little wind occurred. Fifty-nine farm visits were made and 63 requests for assistance received.

Land development in the vicinity of Irrigon is becoming renewed, since a number of purchasers have begun work this spring. It is apparent that most of these settlers have selected the better class of soil and are making a good start.

Very decided improvement in the character of land development work is noticeable in all parts of the project. All but a few persons are either making borders, or have prepared the land for them and plan to put the ridges in at the close of the first year's irrigating. It has been repeatedly emphasized that border irrigation should be used on this light soil and that careful work is necessary to get desirable results in water economy, and satisfactory irrigation. That the effect of this work is being felt is shown by this improvement in character of development work. It is also apparent in numerous details such as can be seen in the rapidly increasing number of well-built ditches, and the quite general use of wide-ditch gates, and concrete drop and diversion structures.

Uncompahgre.

Visited twelve farms during the week ending April 19, and received calls from twelve sources.

Uncompahgre (continued).

One day was taken up with the sheep-scab inspector, in visiting the shearing pens. There are several herds that have been dipped for scab and it seems to be pretty well cleaned up at the present time.

A call was received from one farmer regarding sick calves. The trouble was found to be calf diphtheria. The owner was advised to call a veterinarian to treat the cases as they were quite serious.

One case of sickness in hogs was investigated with the county agent and association veterinarian on Sunday and the sickness found was pronounced by the veterinarian to be Hemorrhagic Septicemia. Several hogs had been lost.

The feed conditions are serious at the present time. It has been difficult to find hay to supply the need. Some cattle have been turned out in poor condition and it is predicted that there will be a heavy loss.

Sheep shearing is well under way.

Nine calls were received during the week ending April 26, and 11 farm visits were made.

Two days of the week were spent with Mr. L. G. Babcock, of the Bureau of Entomology, a specialist on parasites on live stock. The main work done was on the control of hog lice and chicken lice. Several species of chicken lice were found on project farms. Articles were prepared and given to the local papers on the matter of control of these parasites.

The live-stock health protective association was assisted along the line of work. It has been quite a busy season for the association veterinarian. He has vaccinated over 2,000 cattle for Hemorrhagic Septicemia. It has broken out among the hogs in some cases.

The greater part of the range cattle have been taken to the early ranges. Some of the cattle were very thin when turned out. The early range is good now so that no more losses are anticipated.

Most of the sheep have been sheared but no wool has been sold. The sheepmen expect 50 cents per pound for their wool.

Butterfat prices are at 62 cents the last of the week.

WEEKLY BULLETIN

Of the Offices of

WESTERN IRRIGATION AGRICULTURE and DEMONSTRATIONS ON RECLAMATION PROJECTS

Vol. XV.

May 17, 1919.

No. 20

Western Irrigation Agriculture.

Field Notes.

Huntley.

During the week ending May 3, the maximum temperature for the week was 79, minimum 31 and precipitation .56 inch.

Water was turned into the canals on April 28 or about two weeks earlier than usual. Irrigation of alfalfa and grass pasture was begun.

The rainfall which occurred on May 1 was badly needed to insure even germination of grains and beets that have been planted. The planting of spring crops is well advanced and practically all crops excepting corn and potatoes have been planted.

A few cars of potatoes have been loaded locally at a price of 90¢ per cwt.

Winter wheat in this section is in excellent condition and there have been no reports of winter killing.

The spring seeding of all crops, except potatoes and corn, on irrigated crop rotations, was finished during the first half of the week. The plats for the seeding of corn and potatoes were worked down and a good seed bed prepared, about the middle of the week.

The experiment of pasturing alfalfa with hogs was commenced May 2. Five pure-bred Duroc-Jersey fall pigs were placed on each of two quarter-acre alfalfa plats. The average weight of the pigs used was 121 pounds each.

The alfalfa is putting forth a steady, strong growth, having attained an average height of 7 inches. The spring-seeded wheat is making a fair growth which points to a good stand.

Newlands.

During the week ending May 3, the various treatments of the small plats in B 9 and 10 were completed and the series was plowed and harrowed and made ready for planting.

All of Field 3 and plats H 3 and 4 were harrowed with the spring-tooth to kill weeds before planting to corn. Plats E 1 and 2 were plowed and harrowed to kill alfalfa plants previous to planting corn.

Potato tests as follows were put in plats H 3 and 4:

Newlands (continued).

Time-of-planting; Distance-of-planting; Whole-or-cut-seed and Size-of-seed. The treatment of the eelworm seed was completed.

The following fields were irrigated during the week. All Field C. All of field but plats 1 and 5. All of Field F. In Field H the following were irrigated: 1, 2, 8, 9, 10, 14 to 25 inclusive.

San Antonio.

During the week ending May 3, the maximum temperature was 84, minimum 53, and the greatest daily range 28. Precipitation amounted to .79 inch. Much of the cotton planted several days ago had failed to germinate. The showers of this week were sufficient to bring this up in good shape. All crops made good growth.

On account of the rain it was necessary to spend considerable time at odd jobs, mainly about the grounds. After the rain all crops except cotton were cultivated. The corn on F3 and some of the corn (Corn Investigations) on C5 was thinned. Several of the rotation plats were weeded. Part of the orchards were cultivated. Fallow land was harrowed. A small plat containing about half an acre on A3 was harrowed twice and weeded. On May 3, Rhodes grass was seeded on this and harrowed in. Three varieties of field peas were harvested. This was done a little late as most of the vines were brown.

Mr. Davidson replanted cotton on B4 and C6. He also planted some miscellaneous cottons on C3.

The plats of oats on D3 were measured and cut off to the proper length. The same was done with the flax varieties on C3.

During the week ending May 10, the maximum temperature was 88, minimum 57, and greatest daily range 23. The weather was cool and cloudly and several light showers occurred; the total precipitation was .59 inch.

Wet weather interfered rather seriously with field work. The principal work for the week was harvesting oats. Oats on all except three plats in the rotation experiments were harvested. Field oats on B3 and C3 were cut and the selections and varieties on D3 were harvested. Three wheat varieties on field D3 were harvested. Oats cut for hay the preceding week were raked and cocked. Two plats of flax in the date-of-seeding test were cut. The best crop of winter grains for many years has been produced this season. Sorghums in the variety test were thinned. Some weeding was done on rotation plats and in other fields. Some labor was used during wet weather in cleaning and painting plat stakes and in miscellaneous work about the buildings and grounds.

Mr. R. S. Kirby of the Office of Cereal Investigations, who is engaged in grain rust investigations, spent Friday and Saturday at the farm. Considerable rust developed on the grains this season. A large number of grain varieties were seeded for Mr. Kirby on Saturday to determine whether any of them would live through the summer and to

San Antonio (continued).

furnish material for studying rust problems.

Mr. R. L. Harden, formerly of the Washington office, arrived on May 4 to assume his duties as farm clerk. Mr. Letteer returned from Washington on the 4th.

Yuma

During the week ending April 26, the following crops were irrigated: flax, first-year alfalfa, dates, potatoes, and berries. All nursery stock was cultivated and hoed. The dates in A-25 were ridged up and borders constructed between the rows.

The following Kekchi cotton progenies were planted on plat E-43:

Plat No.	Row No.	Progeny Number.	
		West Half	East Half
E-43	1 to 5	Bulk No. 1	
E-43	6	3-6-2-3-3-B1	3-6-2-6-1-1-B1
E-43	7	3-6-2-3-3-B2	3-6-2-6-1-1-B2
E-43	8	3-6-2-3-3-B3	3-6-2-12-2-A1
E-43	9	3-6-2-12-1-1-A1	3-6-2-12-2-A2
E-43	10	3-6-2-12-1-1-A2	3-6-2-12-1-4-A2
E-43	11 to 14	Bulk No. 2	

The field peas used in the plat variation test on plats C-33 and 34 were harvested.

Orchard and park lands were disked and harrowed during the week ending May 3. All the dead trees were removed from the orchard and burned. The date lands, A-16-21, were plowed, harrowed and ridged up.

The following crops were irrigated during the week; alfalfa, flax, cotton varieties, nurseries and garden.

On May 1 eight grade Duroc-Jersey shotes averaging 55 pounds each, were placed on the alfalfa pasture on plats B-2 and 3. These pigs are being fed a supplementary ration of 2 pounds of cracked grain sorghum to 100 pounds live weight.

Considerable difficulty is being experienced in securing a binder to harvest the grain plats. All plats in the wheat and barley variety tests will be ready to harvest in about a week.

Mr. A. M. Silver, the farm clerk, resigned April 30 to take a position with a South American Commercial Company on the coast.

Maximum temperature for the week 99, minimum 45, greatest daily range 41.

Demonstrations on Reclamation Projects.Field Notes.

Belle Fourche.

The first part of the week ending May 3 was spent in the office in preparing and sending out a letter to the wool growers improved methods of preparation of wool. This letter was written mostly for farmers not well informed in the handling of wool at shearing time. Also a copy of the by-laws governing the handling of wool by the cooperative wool marketing association, was sent to each wool grower. A meeting of the directors of the two cooperative wool marketing associations was held at Newell, Wednesday of this week. A warehouse was selected in which wool is to be stored.

Thursday a bunch of forty hogs on a feeding test were weighed.

One day was spent in company with the president of the County Farm Bureau in the interest of a county agent for Butte county.

Three office conferences, eight street conferences and six farm visits were held during the week.

One sheep grower, the owner of 25 imported Corriedale bucks, visited the office Saturday and is very much interested in a cooperative importation of Corriedale ewes. This gentleman states he could use fifty at \$100. a head. If enough to make a carload is desired an effort will be made through the Bureau of Animal Industry to import them.

A boys' and girls' "Baby Pork Club" was organized Saturday at Vale. Two such clubs are now in operation. The other is at Newell.

Minidoka.

During the week ending May 3, seven farm visits were made, 37 office calls were received, 15 telephone calls received. One meeting with attendance of 30 was addressed; 1 pure-bred Shorthorn bull was selected; one executive committee meeting of the Minidoka County Farm Bureau was attended where the new county agent, Mr. Grover Burnett, was engaged and 1 meeting of seven pure-bred Hereford breeders was attended where the Southern Idaho Hereford Breeders' Association was organized. Two hundred and eighty circular letters were sent out with reference to the Minidoka County Wool Pool and 3 newspaper articles were written.

A meeting was held Saturday night at Paul for the purpose of deciding whether or not the Paul Cheese Factory should operate. The attendance was not as good as at the first meeting. It developed during the meeting that most of the farmers who were taking cows were doing it with the idea of being an aid to starting the cheese factory rather than going into the business of milking cows. Mr. G. E. Frevert of the Western Office of the Dairy Division was present at the meeting and discouraged the starting of the factory until conditions were reversed; that is, that there would be enough cows in the community so that it would be necessary for the cheese factory to operate in order to take care of the surplus milk. Until such a time arrives the only

Minidoka (continued).

feasible way of taking care of the dairy products would be through cream-receiving stations. Mr. Frevert stated further that, in view of the fact that the whole milk was taken from the farm, the price for butter-fat to the producer should be from 15 to 20 cents higher than when the skim milk was kept on the farm and the cream was sold.

The Minidoka County Grazing Association will not take advantage of the forest reserve this year. This association was definitely and efficiently organized earlier in the spring; then one man sold his entire herd of 300 sheep. Shortly afterwards, the man who was to take charge of the association band, sold his herd of 400 sheep. Some time was spent in the attempt to secure a sufficient number of sheep to fill out the band and hire a herder. After making every effort possible, it was finally decided to give up the entire organization. Of all farm organizations, this is the one that seems to be the most difficult to perfect and have working smoothly, especially where members of the association have less than 200 head of sheep. If the organizer of the association had the power to grant permits so that it would be unnecessary to wait a number of weeks to find out whether or not permits would be granted for the parties entering the band, it might be easier to get a definite organization. Further, when this band is filled, everyone ought to be obliged to hold their sheep for the grazing season. Under the present plan, after due consultation with the forest supervisor and the previous agriculturist on this project, Mr. W. E. Meyer has come to the conclusion that for the time involved and the benefits received therefrom the sheep grazing association in Minidoka county is not worthy of too much attention. From present indications, the community sheep grazing association on the south side of the river will continue for the season.

During the week, the county agent problem came up once more and the Farm Bureau Executive Committee met and appointed Mr. Grover Burnett. Mr. Burnett is a graduate of the Utah Agricultural College and the Idaho Agricultural College and a native of this State which means that he is well qualified to handle problems in connection with western agriculture. With the two county agents on the project well qualified in crops and seed production, this project will apparently be an ideal place to carry on live-stock extension work through their organizations.

The Southern Idaho Hereford Breeders' Association was organized at Burley during the week. Seven rather prominent Hereford breeders, representing five counties in southern Idaho, were present at the meeting. The details of the organization and its plans for the future will be submitted later.

A carload of Holsteins was shipped to Rupert early in the week. These will be sold at public sale some time during May. Also two cars of pure-bred Shorthorns were shipped to Burley. These are to be disposed of at public sale during the coming week.

Newlands.

During the week ending May 2, there were received 29 calls for assistance and twelve visits were made to farms. On two farms assistance was given in the construction of cement dipping vats, one for sheep and one for cattle.

The shearing of sheep has been under way in this locality for the past two weeks, and buyers are bidding 45¢ per pound for wool. Most of the wool is owned in small lots and is being sold to the buyers as the owners are not inclined to speculate on the market.

Arrangements were made during the week with the State Disease Control Service and the agent representing the Federal Government for tuberculosis eradication, for testing dairy herds in this valley for tuberculosis. Four herds will probably be tested this coming week. The regular testing campaign in this valley will probably not start till later in the summer. The herds to be tested now are supplying milk to the town of Fallon.

The spring campaign of anthrax and black leg vaccination was arranged for during the week and work will begin within a few days.

During the week ending May 3, ten requests were received from farmers for assistance and nineteen farms were visited for general live-stock work. Several calls were received to inspect sick hogs but there was no cholera found.

Two very fine herds of pure-bred dairy cattle were brought onto the project this week. One of these, a herd of nine Jerseys, was bought by a farmer living near Mitchell who has been keeping high-grade Jerseys and will now keep only pure breds. These cattle were bought near Sweetwater, about the center of this state. The herd of pure-bred cattle are Holsteins and went to the eastern end of the project just north of Bayard. There are 15 head in this herd. The Jerseys averaged in price \$300. per head and the Holsteins averaged \$450. per head. One of our pure-bred Holstein men attended the Nebraska Holstein sale at Omaha last week and came home this week with a senior two-year-old heifer having a seven-day record of 22.14 pounds. The price paid for this heifer was \$1,000.

Shoshone.

During the week ending April 5, one farm visit was made, 19 office calls were received, 15 other conferences were held and 10 milk samples were tested.

A cooperative shipment of a car of 80 fat hogs, seven men co-operating in the shipment, was made to Denver. The hogs were loaded Thursday morning and reached Casper Friday night; they were fed there until Sunday at 5 A.M. so that two nights and one day were spent at Casper and the hogs were fed 1100 pounds corn at 5 cents per pound.

All of the week ending April 12 was spent on the trip to Denver with the load of hogs. The party had left Powell Thursday A. M. and reached Casper Friday at 8 P. M. for the first feed.

Shoshone (continued).

They did not leave Casper until 5 A.M. Sunday. When Wendover was reached at about 6 P.M. a bad storm was encountered and the hogs were unloaded at Guernsey and reloaded Tuesday about 8 P.M. The hogs reached Denver for the Thursday market just a week after they were loaded at Powell. Fourteen of the hogs sold for \$20 per cwt.; 36 for \$19.90 per cwt.; 9 for \$19.75; 15 for \$19.65; 6 stockers for \$17. The actual expense of shipping was \$1.58 per cwt. and the cost of shrinkage about \$1.00. The classification of the hogs was satisfactory.

An attempt was made to find some way of shipping veal calves with other stock but no satisfactory way was found. Suggestions on shipping veal calves by freight will be welcomed. If some way could be found for shipping veal calves profitably, it would be quite a step toward inducing the farmer to keep high-grade dairy cows.

During the week ending April 19, twenty-eight office calls were received and 9 other conferences were held. An article was written for local papers on results of last hog shipment.

An illustrated lecture on pork production was delivered at a meeting at Deaver which was arranged for by the county agent. The farmers were very busy and only ten men were present.

Arranged for receiving cattle for the Forest Reserve herd on Sunday and Monday of next week.

During the week ending April 26, one farm visit was made, 21 office calls were received, 8 other conferences were held and 202 cattle were inoculated for blackleg in 12 herds.

The first lot of cattle which are to go onto the Forest Reserve range was received during the week.

Uncompahgre.

Visited nine farms during the week ending May 3 and calls were received from fifteen sources.

Two days of the week were spent in the interest of the Victory Loan. Two days were taken up with the Montrose County Agent, in work starting the boys' and girls' clubs, in this work ten of the rural schools were visited and talks given on the pig-club work. It is estimated that at least fifty boys will be enrolled in pig-club work in Montrose county.

One day was spent on the pure-bred Duroc-Jersey hog sale on the farm of Wilson and Arret. In this sale some one hundred head of hogs were sold. The interest was fair and prices ranged from \$40 to \$127 for sows with litters.

A breeder of Percheron horses visited the office during the week and discussed the advisability of an auction sale of two carloads of registered Percheron mares on the project. It is planned to hold the sale on May 17.

Uncompahgre (continued)

Another small outbreak of cholera was reported during the week on Spring Creek Mesa.

MISCELLANEOUS.

The attention of all field men concerned is directed to the following memorandum, dated May 12, from the Chief of Bureau:

"Gentlemen:

There has recently been called to my attention a case where a voucher was certified for payment and payment made prior to the actual receipt of the material for which payment was made. This is a violation of law and the fiscal regulations of this Department, and it is especially urged that definite knowledge be obtained that the service has been actually rendered, or material received, before any voucher is forwarded for payment. Please advise your field force accordingly.

Very truly yours,

WM. A. TAYLOR.

Chief of Bureau."

Of the Offices of

WESTERN IRRIGATION AGRICULTURE
and
DEMONSTRATIONS ON RECLAMATION PROJECTS

Vol. XV.

May 24, 1919.

No. 21

Western Irrigation Agriculture.Field Notes.

Huntley.

During the week ending May 10, the maximum temperature was 75, minimum 29, and the precipitation .63 inch.

Weather conditions were favorable for field work during the entire week. Seeding of all crops except corn was completed. The rainfall of .56 inch during the week of May 4 to 10 was the first of any consequence to occur during the spring season and, as a result, spring-planted crops in many cases are in rather poor condition. A few farmers are resorting to irrigation to get crops started.

The cows were placed on pasture in Fields L-III and A-IV on May 8, at the rate of two cows per acre. In Field L-III a carrying capacity test of three grass mixtures is being conducted.

Irrigated Crop Rotations.

During the first part of the week potatoes, variety Mills Prize, were planted in the irrigated rotation plats in Field K and L IV. An experiment on "comparative tests of yielding power of irrigated and non-irrigated potatoes" was commenced, in co-operation with the Horticultural Department of the Montana State College. Two varieties of potatoes, Montana 203, a selection of Russet Burbanks and Montana 212, a selection of Rural New Yorkers, were used. Fortieth-acre plats, in duplicate in Field L-IV-28 were planted with each variety.

Alfalfa in the rotation plats is making a fairly good growth, although it is showing indications of needing moisture and irrigation will be applied during the coming week.

Rotation 67, Field K.--Fall Pigs on Alfalfa Pasture and 2% Corn.

No. of Hogs	No. of Days	Initial Weight	Final Weight	Gain	Average Daily Gain	Pounds Corn Fed	Lbs. Gain per pounds Grain
4	7	lbs. 123	lbs. 130	lbs. 7	lbs. 1		
22	7	125	130	5	.71		
24	7	126	129	3	.43		
64	7	127	130	3	.43		
65	7	114	123	9	1.3	116	4.3
Total		615	642	27	3.87		
Avg.		123	128	5.4	.77		

Huntley (continued).

Rotation 69. Field L-IV - Fall Pigs on Alfalfa Pasture and 2% Corn
(on cob)

No. of Hogs	No. of Days	Initial Weight	Final Weight	Gain	Average Daily Gain	Pounds Corn Fed	Lbs. Gain per pounds Grain
		lbs.	lbs.	lbs.	lbs.		
45	7	126	130	4	.59		
53	7	133	137	4	.59		
54	7	127	134	7	1.		
61	7	123	130	7	1.		
90	7	101	116	15	2.14	116	3.1
Total		610	647	37	5.32		
Avg.		122	129.4	7.4	1.06		

Newlands.

During the week ending April 26, the park plats at the northwest corner of the farm lying along the main road were leveled, seeded to barley and sweet clover and irrigated. The following plats were irrigated: H 3, 4, 5, 6, 7, 16; B 5, 6, 9, 10, 18, 19, 20; C 2, 3, 4, 5, 6, 7; A 1, 2, 3.

The work of preparing the small experimental plats on plats B 9 and 10 was begun. Manure was applied to those that were to be treated to manure and a part of the plats were plowed.

The cabbage varieties were removed from the hot-bed and transplanted in the lath house. The orchards in A 1, 2 and 3 were cultivated.

The weather has been mild and there is good prospects for an abundant fruit crop.

During the week ending May 10, the potatoes of the "Eelworm treatment experiment" were planted in duplicate at the lower ends of plats H 3 and 4. The experiment consisted of treatments as follows: (1) Untreated; (2) 30 degrees C for 12 hours; (3) 35 degrees C for 12 hours; (4) 35 degrees C for 24 hours; (5) 35 degrees C for 48 hours; (6) 40 degrees C for 6 hours; (7) 40 degrees C for 12 hours; (8) 40 degrees C for 24 hours; (9) 40 degrees C for 36 hours; (10) 45 degrees C for 6 hours; (11) 45 degrees C for 12 hours.

Barley and Grimm's alfalfa were planted in the lower ends of plats B 9 and 10.

The cows were placed in the sweet clover pasture lying west of the cock house.

All the apple and pear trees not previously sprayed were sprayed with arsenate of lead.

Umatilla.

During the week ending March 29, the maximum temperature for the week was 75 and the minimum 21. No precipitation.

The work of grading field C1 into borders was completed during the week. Since there was a variation in the crop treatment of the field when it was in orchard and there is one rather heavily graded area the whole field will be put into corn this year to measure the soil variation. The rotations will be started in 1920.

Cooperative trials of sulphur for fertilizer were arranged with 6 farmers on 5 soil types. The trials are being conducted on Butter Creek, Stanfield, Boardman and 2 soil types on this project.

During the week ending April 5, the maximum temperature was 74 and the minimum 33. Precipitation .38 inch.

The grading of field A4 was completed during the week. The borders are one-tenth acre to conform to the plats of the original fertilizer experiment. The rotation will be four years alfalfa, one year corn and one year field peas and barley to be hogged off. The peas and barley were planted April 4.

The maximum temperature for the week ending April 12 was 66 and the minimum 24. Precipitation .13 inch.

The temperature fell to 24 one night and 28 another night during the week. The peaches and apricots were past blossoming, the sweet cherries in full blossom and the pears were beginning to blossom. Practically all the peaches and apricots were killed, most of the sweet cherries and the fall varieties of apples were killed.

F. L. Ballard, Assistant State Leader of County Agents, visited the farm and project.

The maximum temperature for the week ending April 19 was 71, the minimum 26 and the precipitation .17 inch.

The grading of field D5 into borders was completed during the week. The field has been cut into four sections by ditches running east so that the length of run will be one hundred feet and the borders are 25 feet wide. The field will be used for duty of water experiments with alfalfa, peas and barley, corn and sweet clover. Each crop will have three different applications of water and the medium application will be duplicated on plats which have been manured.

The maximum temperature for the week ending April 26 was 76 and the minimum 29 with no precipitation.

A concrete ditch was completed to supply the "A" fields. The ditch is one foot wide on the bottom and the sides two feet. The concrete is one and a half inches thick and was plastered on after

Umatilla (continued).

the sides had been tamped in against a form. The turnouts are also concrete, the only wood being the turnout and check gates.

The orchard was irrigated during the week.

The maximum temperature for the week ending May 3 was 71 degrees and the minimum 27. No precipitation.

The temperature fell to 27.5 degrees on the nights of May 2 and 3, killing practically all the fruits on the farm which had not been killed by the earlier freezes. The plums, sour cherries, part of the pears and apples had gotten by the previous freezes. The fruit was all past the blossom stages, but it was cold enough to kill it anyway. The farm is located on the coldest part of the project as the apples and on some parts of the project even the peaches and apricots have not been killed. The grapes leaves were nipped but will come again.

Fences were built around the yard and the alfalfa surrounding the machine shed. Sheep were put on the yard to ascertain the carrying capacity of bluegrass. Hogs have been placed in the alfalfa pastures.

The maximum temperatures for the week ending May 10 was 79 degrees and the minimum 38. No precipitation.

The duty of water experiments in field D5 were irrigated and planted during the week.

The orchard was irrigated. It has been found that frequent irrigations early in the season produce much larger crops of vetch and rye to be turned under than frequent irrigations later. If water is withheld early, the vetch goes to seed and a heavy vegetative growth is not secured.

Yuma

During the week ending May 10, the following lands were irrigated: nursery, garden, pasture, fallow, first-year alfalfa, park and roads.

Cotton plats were cultivated and thinning begun on Pima cotton in series C, plats 26, 27 and 28.

Barley and wheat varieties in series C and D were harvested. Second-cutting of alfalfa hay is all in the shock ready for hauling.

Grain sorghum selections were planted on plats D-29 and E-42.

The following meteorological observations were made on this station for the week: maximum temperature 93, minimum 53, greatest daily range 39, and precipitation 0.

Demonstrations on Reclamation Projects.Field Notes.

Belle Fourche.

Three days of the week of May 10 were spent in the interest of the sheep industry accompanied by the cooperative sheep specialist of the U. S. Bureau of Animal Industry and the State College. A number of photographs of Corriedale sheep were taken and samples of wool secured.

Interest is being revived in the importation of a shipment of registered Shropshire sheep. Several farmers have sent in requests for bucks and ewes in case an importation is made.

Mr. Frank Cock, Rambouillet breeder on the project and President of the Rambouillet Association, states he expects to fit a number of sheep for the Denver sale. Also he will have a lot of about 200 for sale locally. This sale will be held in all probability at Belle Fourche in the fall. Mr. Cock is lambing approximately 135% from his herd of 800 ewes.

Interest is increasing in a cooperative shearing plant in the Vale district. Such a project may materialize next year.

One day was spent in meeting the boys and girls of the Vale and Newell "Baby Pork Clubs." The youngsters are manifesting a great deal of interest in the contests and competition will in all probability be very keen when the judging is held. Part of a day was spent in organizing eight of the girls of the Vale school into a Girls' Canning Club.

Seventeen farm visits were made during the week. Five office conferences were held.

Huntley.

A carload of registered Shorthorn heifers ranging in age from 8 to 14 months, shipped under the auspices of the Merchants' Bank of Billings, arrived during the week ending May 10. These calves were procured for the Boys' and Girls' Calf Clubs of Yellowstone county. Fourteen of them came to the project. They are of good breeding and most of them are good individuals. In addition to these, an exceptionally good Shorthorn bull was purchased by one of the men securing two of the heifers. He was bred by Bellows Brothers, Missouri. Arrangements have been made by which he will be used by most of the owners of registered females. By request, considerable time was spent aiding owners with questions relating to the feeding, management and breeding of the above mentioned animals.

Much interest in the Ballantine cheese factory was evident during the week, largely due to a published notice of a meeting, May 17, at which stockholders are to consider the advisability of selling the factory. An offer has been received and owing to

Huntley (continued):

the fact that only 3 shareholders are also patrons there is considerable sentiment in favor of selling.

Advice or assistance was given to six live-stock owners in relation to diseases of animals. Assistance was given to the agricultural classes of the Worden and Ballantine schools.

Twenty-six requests for advice or assistance were received and 34 visits to farms made.

North Platte.

During the week ending May 10, ten calls were received from farmers and twenty farms were visited for general live-stock work. Several telephone calls came in during the week reporting sickness among the hogs on various farms. Two cases were found where the hogs had been fed too many potatoes and sickness had resulted and the principal trouble in the other herds was sore mouth among the young pigs. All of these young pigs were given the iodine treatment. One man was assisted in the selection of four pure-bred Duroc-Jersey brood sows to take the place of four scrub brood sows which he will send to the market.

Considerable time was spent this week with members of the dairymen's association. Some of these men are planning to build silos this year and will cooperate in buying forms for the erection of concrete silos and also in buying the machinery for filling the silos. The dairy industry in the valley is constantly growing, and there is a marked improvement in both cattle and buildings during the past year.

Shoshone.

During the week ending May 3, four farm visits were made, 37 office calls were received and 14 other conferences were held.

Arrangements are being made for a cleanup shipment of a mixed car of fat and stock hogs, but some difficulty is being experienced in getting a carload.

The cooperating ordering of seed for grass pasture is about over for this season. So far, fifteen farmers, to seed 85 acres, have ordered 278 pounds brome grass, 451 pounds meadow fescue, 187 pounds orchard grass, 405 pounds Kentucky bluegrass, 111 pounds alsike clover, 17 pounds white clover, and 123 pounds timothy. The average price on the seed delivered to the farmers was about as follows: brome grass 26 cents; meadow fescue 18 cents; orchard grass 30 cents; Kentucky bluegrass 26 cents; alsike clover 35 cents; white clover 52 cents; and timothy 13 cents per pound.

A farm sale was attended this week at which several Holstein cattle were sold. The cattle were in good condition and brought fairly good prices considering that most of the cows had been milking for some time and that they were not bred to calve before fall.

Newlands.

During the week ending May 10, there were received 34 calls for assistance and eleven visits were made to farms.

Considerable time was spent in cooperating with the State Disease Control Board in anthrax and blackleg vaccination and with the Federal veterinarian in testing for tuberculosis. Forty-three animals were tested for tuberculosis during the week and three reactors were found.

The regular tuberculin testing campaign will begin later in the summer when all the herds of the valley will be tested.

In connection with demonstrations along the line of general herd management instruction and assistance were rendered in the case of retained placenta on two farms, castration of ruptured pigs on one farm, care and treatment of mammitis on two farms, and herd testing on two farms. The demand for good dairy cows continues to increase. First-class grade mature cows are now selling for \$150.

During the past week one carload of fifty dairy heifers ranging in age from three months to one year were purchased in this county, and shipped to Elko County, Nevada, to be used in boys' and girls' dairy calf club work.

Two parties from an adjoining county also came into the valley for two carloads of Holstein dairy cattle, but because of the local demand for producing animals and high prices they decided to look elsewhere.

Umatilla.

On account of freedom from wind, and the occurrence of several good showers, April was very favorable for getting crops started. As the result of favorable weather, irrigation was delayed, in many instances, until young alfalfa died out, or until the growth of old alfalfa was checked. This occurs on some farms almost every year, but was more general this season than formerly.

Irrigation water was made available for distribution by the Reclamation Service March 1 and came into general use about April 10, which is about ten days later than last year.

As nurse crops for alfalfa, wheat and barley are gaining some favor on the finer soils of the project, and on land that has been in alfalfa for some time; however, their use is very limited and should continue so on account of their poor resistance to the wind.

The effort to get better ditches and ditch structures is bringing very noticeable results in the increasing popularity of wide-ditch gates and drops. Cement is being recommended for use under certain conditions and is being considerably used for drops, gates, and for conducting water down slopes to avoid flumes and wooden drops.

Umatilla (continued).

During the month 49 requests were received for assistance in laying out ditches on new land, suggestions on land development, drop boxes, ditch structures, etc. Sixty-five farm visits were made in response to calls received in March and April. During the latter part of the month the work became slack on account of the interest of the farmers being turned from land development to their regular farm work.

Minidoka.

Mr. W. E. Meyer, who has been on a trip to Wisconsin to advise regarding the purchase of improved stock for farmers on the Minidoka project, writes from Madison, Wisconsin, under date of May 13, that the live-stock buyer Mr. Chester is making good progress in locating stock.

En route to Wisconsin, Mr. Chester and Mr. Meyer stopped off at Wyoming and located 20 head of Shorthorn heifers held at \$200 a piece. He said that prices on this class of stock are high and good animals are hard to locate. In Wisconsin, they have located good Holstein stock, but they are also high. He remarks that a sale of Holsteins at Chippewa Falls averaged \$335 per head.

Mr. Meyer expects to be in Wisconsin for several days longer, and will return to Minidoka by way of Nebraska, where he will stop at Lincoln and Scottsbluff.

Yakima.

Eight calls for assistance were answered during the week ending April 12, twenty-five farms were visited and there were no office conferences. Two days were spent at the Washington State College attending a part of the county agents' two-week conference. Two days were spent in visiting farmers near Benton City, a new part of the Sunnyside Unit where a number of farmers are doing development work.

The Tieton Cattle Association, a cooperative grazing organization, has passed a ruling requiring that each member contribute one dollar per animal to be handled by the association into a bull fund. Eight pure bred, registered Shorthorn yearling bulls have been purchased by this means this spring. This action marks the end of a long controversy between scrub, dairy and beef bull advocates and it was put through chiefly by the small herd owners.

The Tieton Cattle Association ran about 1,200 head of cattle in the Tieton River Basin, a part of the Rainier National Reserve, in 1918. The cost of operation was \$1.60 per head. The herd was cared for by contract and the plan proved to be very unsatisfactory. Of the total loss of 55 head only 27 could be accounted for. It is possible that the unknown losses were largely by "rustlers" for at least one instance of capture and court punishment was reported. The losses on this range have been comparatively large for the last few years and several members of the association are planning to keep their herds on farm pastures in 1919. There are enough prospective new members, however, to keep

Yakima (continued).

the association of good size.

That part of the county agents' conference of most interest to this office was the work of the committee on dairy projects. The problems of marketing Washington state dairy products are receiving much attention, particularly those of marketing whole milk. An ultimate organization of the dairymen by county associations having representation in a state association appears to be highly desirable. The Puget Sound counties and those near Spokane are already quite well organized. Cooperation with cream buying agencies for better quality was also discussed and a proposition proposed by large creamery concerns to furnish printing, postage and patrons lists was discussed pro and con with no final decision. The extension of official and semi-official testing and of cow testing work was discussed as were also the problems of cooperative ownership of bulls.

Five calls for assistance were answered during the week ending April 19, twenty-two farms were visited and four office conferences were held. A few hours were spent at the Adams Branch Experiment Station at Lind, Washington, with Superintendent Mc Call. A half-day was spent on the land selected for the Washington Irrigation Experiment Station on the Sunnyside Unit near Prosser.

Messers. Worrell, Forney and Chambers have completed their winter steer feeding operations, the first of any considerable consequence ever carried on the Tieton Unit. Mr. Chambers fed 50 head on alfalfa hay, corn silage and a grain ration after the supply of silage was exhausted. He estimates a net profit, including his own labor, at about \$1,000. Mr. Worrell's operations have been reported in detail as a feeding account. Mr. Forney fed about 60 head on alfalfa hay, corn silage and dry beet pulp and linseed meal after his silage supply was fed out. His estimated net profit, including labor, is approximately \$1,000. Unfortunately definite figures were not available from the Chambers' and Forney's operations.

The Cowichee cheese factory is now receiving about 4,000 pounds of milk daily. In order to better compete with similar equipment in Yakima city creameries, the Cowichee people will install a small condenser for use with a limited amount of skim milk. The cheese business will continue to be the major project in this plant for they are unable to supply even a small part of the Yakima valley demand for locally made cheese.

Assurance was received this week from the Chicago headquarters of the Duroc-Jersey Breeders' Association that the 1919 State Fair at Yakima will be given the first state futurity contest ever held in Washington. This matter was brought up a few weeks ago when the Poland China Association, principally with the aid of local pig club members, established a state futurity for the 1919 State Fair at Yakima. Messers. Sprong and Cornell, of Grandview, obligated themselves to secure the Duroc-Jersey show

with assistance from this office and with the agreement to work for a county Duroc-Jersey Association this fall.

Three calls for assistance were answered during the week ending April 26, eighteen farms were visited and nine office conferences were held. The greater part of one day was spent on the Washington Irrigation Experiment Farm.

The Cowichiee cheese factory lost several pigs from a trouble which gave evidence of being cholera, but which turned out to be digestive disturbance caused by feeding whey from a filthy tank. This tank, which is ordinarily cleaned and sterilized once each week, had been neglected for several weeks and had become very foul. This experience will have the good result of deciding the management to pasteurize the whey daily. During the last four years a limited number of reactors have been secured to the tuberculin test and have been designated as tubercular at the slaughter house. This whey tank has appeared to be a menace to the welfare of the cattle and hogs in the Cowichiee district because considerable whey is returned to the farms.

The range sheep men have estimated their lambing averages at 120 per cent for this season. A few well-managed bands have gone over 125 per cent, one counting 135 per cent, and some have reported 110 to 120 per cent. The average was computed by the secretary of the sheep men's association. A few wool sales at 35 to 36 cents have been reported and much of the wool has been consigned to dealers at Boston.

Five calls for assistance were received and six farms were visited during the week ending May 3. Three days of the week were spent at the Washington Irrigation Experiment Farm. One pig feeding demonstration was begun with Mr. Waddell at Cowichiee. Sixty-nine cattle in three herds were vaccinated against blackleg. One day was spent on the spring cattle range above the Tieton Unit.

There has been less tendency for the men who use the spring range to turn out too early than in previous years. A few small herds have been out for four or five weeks, but the range is very good at this time and is furnishing good grazing for the 500-600 head which have recently gone out. There have been frequent light rains and dull days on the spring range and the moisture conditions indicate good grazing for several weeks.

A Spokane banker representing Spokane and Holland money has purchased a controlling interest in a local bank with the avowed intention of financing cattle and sheep feeding operations in the Yakima valley. This is a service in which there is opportunity for considerable development on the project for the feeding conditions are good but operations have been restricted to a few. It is the intention of the new firm to loan principally to men who grow their own feed and wish to buy all or a part of the live stock rather than to those who are not growing either crops or live stock.

Seven calls for assistance were answered during the week ending May 10, twenty-one farms were visited and one office conference was held. One day was spent with Dr. Martin in making the final inspection

Yakima (continued).

of sheep bands and one day was spent at the Washington Irrigation Experiment Station.

The sheep in the Yakima valley have been pronounced free from scabies by Dr. Martin, of the State Department of Agriculture, who has been making the final inspections for certification before the bands were allowed to begin trailing toward the summer ranges on the National Reserves. A recurrence of scabies was this week reported to him from Okanogan where there was some trouble last season.

The cooperative grazing association band made up of sheep from the Kennewick district in Benton county with 400 head from the Wapato Unit was shipped to Wilbur, Washington, this week for a summer on the Colville Indian Reservation. There are about 1,220 ewes in the band and they are in charge of one of the owners and an assistant.

W E E K L Y B U L L E T I N
Of the Offices of
WESTERN IRRIGATION AGRICULTURE
and
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Vol. XV.

May 31, 1919

No. 22

Western Irrigation Agriculture.

Field Notes.

Huntley.

Corn, variety Northwestern Dent, was planted in the irrigated rotation plats May 15 and 16.

Three plats of fall-seeded alfalfa in Field L-IV that failed to produce a stand this spring were re-seeded. The beets and flax have emerged and indications are that there will be a good stand. The alfalfa plats, including the plats that were re-seeded, were watered by irrigation during the week.

Due to the lack of sufficient moisture for seed germination, irrigation of corn and potatoes plats in the irrigated rotations was started during the week ending May 24.

The other crops are showing indications of needing moisture, and the irrigation of same will be started this coming week unless there is sufficient predipitation to assure their continued growth.

Rotation 67. Field K.--Fall pigs on Alfalfa Pasture and 2% Corn.

No. of Hogs	No. of Days	Initial Weight.	Final Weight	Gain	Average Daily Gain.	Pounds Corn Fed	Pounds Grain per pounds Gain
4	14	130	147	17	1.21		
22		130	145	15	1.07		
24		129	146	17	1.21		
64		130	146	16	1.14		
65		123	140	17	1.21	214.5	2.61
Total		642	724	82	5.84		
Avg.		123	144.8	16.4	1.17		

In report for week ending May 10, hog No. 23 should read hog No. 22.

Huntley (continued).

Rotation 69. Field L-IV.--Fall pigs on Alfalfa Pasture and 2% Corn
(on cob)

No. of Hogs	No. of Days	Initial Weight.	Final Weight	Gain	Average Daily Gain.	Pounds Corn Fed	Pounds Grain per pounds Gain
45	14	130	149	19	1.36		
53		137	153	16	1.14		
54		134	151	17	1.21		
61		130	148	18	1.28		
90		116	123	7	.5	214.5	2.78
Total		647	724	77	5.49		
Avg.		122	144.8	15.4	1.1		

Newlands.

During the week ending May 17, the forty small plats in B 9 and 10 were leveled, irrigated and seeded to wheat. Manure was applied to G 2 and 4 at the rate of 4 loads per plat. Because of the dry condition of the soil of plats E 7 and 8, the beet seed failed to germinate and they were, therefore, irrigated, cultivated and re-seeded. Plats D 1, G 2 and 4 were disked to make them suitable for the planting of corn.

During the week the following plats were irrigated: Field B; Field C; E 1, 2, 7, 8; F 4, 15; H 5, 6, 7, 13, 16; part of A 3.

Seventy-five plants of each of the following varieties were transplanted from the cold frames to the field; kohl rabi, cauliflower, Early Jersey Wakefield cabbage; Flat Dutch, Enkhuisen, All Season and Danish Ball head.

The following sweet corn varieties were planted in A 1, Peep o' Day, Narrow Grained Evergreen, Black Mexican, Columbus Market, Golden Bantam, Country Gentlemen and Early Sugar.

San Antonio.

During the week ending May 17, the maximum temperature was 87, minimum 59, and greatest daily range 28. A heavy shower came on May 11, a smaller one on May 15 and a rather light one on May 17. The total precipitation was 1.47 inches.

The wet weather delayed field work rather seriously. Weeds and grass are making luxuriant growth and promise to keep us busy for some time. All crops are growing well, corn is beginning to tassel and milo will soon be heading. A reasonably good stand of cotton was obtained from the second planting. Cutworms have done slight damage on some plats. Poisoned bran mash was put on several plats early in the week.

San Antonio (continued).

Cutting of oats on the rotation plats was completed, three plats having been unripe at the time most of the plats were cut. A large part of the corn and cotton was cultivated. Rain prevented the completion of this work. Milo and sorgho in the rotation experiments and the sorghum varieties were cultivated. Corn in the different experiments on field C4 was weeded. Some time was spent in clearing and painting plat stakes and in stenciling stakes.

The fence around one of the oat pastures in the steer-pasturing experiment was removed and post holes were dug for constructing a fence around the Sudan grass to be used in pasturing work.

During the week ending May 24, the maximum temperature was 83, minimum 50, and greatest daily range 31. A heavy shower amounting to .30 inch occurred on Friday night which prevented field work on Saturday. This was the only precipitation during the week.

The principal work during the week was cultivating. All cotton, corn, sorghum and other row crops were cultivated. Fallow plats were disked and orchards were cultivated. Rye and barley and Kubanka wheat on field D3 were harvested. Flax varieties in field plats were cut. Cotton on field AB-8 was thinned and weeded. Cotton on field C6 was weeded and a part of it was thinned. Some other fields were weeded. Cowpeas were seeded between the corn rows in the wide-row experiment on field C5. Field peas, in the variety-and-rate-of-seeding test on field A3 were harvested.

Oats hay from the rotation plats was hauled in. The average yield from the eight plats harvested for hay was at the rate of 3.31 tons per acre. The highest yield from any one plat was at the rate of 3.79 tons per acre, and the lowest yield was at the rate of 2.11 tons per acre. The highest yield was from a rotation of corn and oats; the lowest yield from a three-year rotation of milo, oats, cotton, with manure applied preceding the milo.

Yuma.

The following crops were irrigated the forepart of the week ending May 17: nursery stock, garden, berries, figs, alfalfa, Sudan grass, millet and Bermuda pasture.

Dwarf hegari sorghum was planted on the two plat variation lands C-33 and 34.

Roads were disked and hoed, and borders trimmed. Manure was hauled from the barn-yard and stock pasture for the deciduous orchard.

A plat of Macaroni wheat and one of Trebi barley were harvested. This completes the harvesting of the grain varieties with the exception on one plat of Kanred wheat.

Yuma (continued).

The Acala seed planted in the cotton variety test has failed to germinate. This same trouble has been experienced by farmers who have been furnished Acala seed from the same source as that used for station plantings. A new lot of seed has been received and this block will be re-planted immediately. All other cotton plats are growing nicely. A very fair stand has been secured on every other planting.

The following climatological conditions were recorded for the week: maximum temperature 97, minimum 50, greatest daily range 45.

During the week ending May 24, ten acres of alfalfa, 3 acres of fallow, 2 acres of dates and some small nursery plats were irrigated.

The cotton lands were all cultivated and hoed.

Grain sorghums for increasing pure seed were planted on plats A-15, B-18 and C-6. Soybeans were planted on plat C-36, one-half of the plat was planted with inoculated and the other half with uninoculated seed.

The barley and wheat varieties in series C and D are being threshed. Flax varieties on plat C-35 were harvested and will be threshed this coming week.

First-year stands of Kansas Common, Arizona Common, Smooth Peruvian and Hairy Peruvian alfalfa were cut.

Fallow lands in series D were leveled and harrowed preparatory to planting sorghum varieties.

Borders were hoed on series C and D.

Maximum temperature for the week 96, minimum 43, greatest daily range 44, precipitation 0.

Demonstrations on Reclamation Projects.

Field Notes.

Belle Fourche.

During the week ending May 17, eleven farm visits were made and ten office calls answered.

State and federal veterinarians are on the project testing herds the second time preparatory to placing them on the accredited herd list. One additional herd was entered during the week that was not tested during the last visit. This test was made and no reactors found. One very prominent Holstein herd on the project, which had 19 reactors in the first test, had 14 additional in this test, making a total of 33 head out of 90. A very severe loss to the owner. The intra-dermal, subcutaneous and opthalmic tests were used.

Accompanied with the State Boys' and Girls' Club Leader, the Newell, Vale and Horse Creek Schools were visited and addresses made to the upper classes regarding live-stock club work and general club activities.

Belle Fourche (continued).

Irrigation was begun during the latter part of the week. While in most cases water was used on growing alfalfa, a few instances were noted where fields of grain recently sown were flooded in order to start the grain. The ground is dry and late-sown grain will not sprout unless rain falls or the water is turned on the field.

Increased acreage of barley and rye is noted over that planted last year. Feed should be plentiful this fall and winter.

During the week ending May 24, thirteen farm visits were made and four office calls received.

Arrangements were completed by the Superintendent of the Experiment Farm at Newell during the week whereby a Boys' Camp will be held at the Farm during the week ending July 19, closing on the day of the Annual Farm Picnic. Letters were mailed to 625 boys in the county between the ages of 10 and 18 years.

Lambing is practically completed on the project. A few range flocks have not yet lambed. Most of the sheep for which range was available have gone out. It is noted that more project farmers are grazing sheep on alfalfa this year than were doing this last year. Losses have not been very excessive. Considerable loss has been reported in several range herds due to Death Camas poisoning. It appears that poisoning in each instance occurred in bands that were late in getting out on the range. There seems to be something in early pasturing on infested ranges and the acquiring of a tolerance for this poison weed before it becomes so plentiful as to destroy the animals when first put on if late in reaching the range. One project sheep man has lost 21 head of pure-bred Rambouillet ewes from bloating in the feed lot on dry alfalfa hay from the stack. Some of this occurred from third-cutting and some from first-cutting. It is rather unusual to see sheep bloat from eating dry alfalfa from feed racks.

The lamb crop in most instances is around 100%. In some cases it exceeds this and runs up to 110%. A large number of twins is reported. The successful season is accounted for in that a mild winter was experienced and feed was plentiful.

The results of the use of Corriedale bucks is very encouraging. The lambs are a very even bunch. Each herd on which the Corriedale was used was well selected. An excellent opportunity of studying the relative merits of the progeny of Corriedales and Shropshires under range conditions is afforded in the Vale district. Range ewes in one instance were bred to Shropshire bucks and in the other range ewes were bred to Corriedale bucks. They will occupy adjoining ranges during the season. There is much interest in the results of this test. The project sheep men want to know if the Corriedale lambs mature as quickly as the black-faces. Also the range men wish to know if the Corriedale lamb will offset the size and wool of the black-faces and at the same time yield a greater return than the present native lambs.

Huntley.

At a meeting of the shareholders of the Ballantine cheese factory, May 17, it was decided not to sell at the price offered, and the directors were authorized to establish a milk route if, after a study of the existing conditions, it is concluded that such a step will be conducive to the welfare of the business.

The stock-judging classes at Worden, Pompey's Pillar, Huntley, Osborn and Ballantine were given assistance, and some time was spent in arranging to have good animals taken to Worden for use by the teams at the final meet.

Several pig club members received advice regarding the purchase and selection of pigs, and a conference was held with local leaders in 3 localities.

There is considerable demand for milk cows just now. Those who are inquiring want good cows immediately, and most of them seem to be averse to cooperative buying. There are no good cows for sale on the project.

Twenty samples of milk were tested.

Twelve requests for assistance were received, and 18 farm visits were made.

Two days of the week ending May 24 were spent attending to matters relating to boys' and girls' clubs, including talks with club members at two schools.

Assistance was given to the agricultural classes at the Ballantine, Osborn and Pompey's Pillar Schools.

Three farmers were assisted in securing pure-bred pigs.

In 5 instances advice was given or demonstrations given in relation to diseases of animals.

Sixteen samples of milk were tested.

Twenty requests for assistance were received during the week and 27 farm visits made.

Newlands.

During the week ending May 17, much time was spent in giving instructions and demonstrations in general-herd management of cattle, hogs and sheep. Herd testing was performed for three herds. On one farm where registered Holstein cattle are kept, the regular monthly official test was started and conducted by this office because of the inability of any one else to perform the test.

There were 32 calls for assistance and ten farms were visited in response to calls.

North Platte.

During the week ending May 17, twenty-one farms were visited for general live-stock work, and on eight of these, stock was either inspected or treated for disease. Several farms were visited during the week for the purpose of getting the owners to cooperate in buying silo

North Platte (continued).

forms and getting concrete silos erected this summer.

A conference was held this week with some of the stockholders and the manager of the Scottsbluff Creamery in regard to starting a milk route as an experiment. If the plan proves to be satisfactory this route will be extended and will be established permanently. The plan is to pay \$3.00 per cwt. to the farmers for the whole milk or the regular market price for butter-fat.

A meeting of the County Fair board was attended during the week and plans were made for a greater live stock exhibit than last year and also for booths in the Merchants' building to be used for educational work in the value of milk on the farm in the feeding of young stock and the different uses as human food.

A few cases of sore mouth in pigs have been treated during the week, but no other swine diseases have been found.

During the week ending May 24, sixteen farms were visited for general live-stock work; of these sixteen, hog cholera was found on four, the dead hogs burned and the live ones vaccinated. This disease showed up this year earlier than in the past, but the weather has been unusually hot this week and it is also the first week of irrigation.

Some assistance was given this week in the dairy work. Samples of milk were tested and the milk weighed on four farms and the rations changed somewhat for the dairy cows. Assistance was given to one man in the selection of a pure-bred Jersey bull. Another registered Holstein bull was shipped onto the project this week. This bull will be used in a herd of good-grade cows. A registered Jersey bull also was shipped in by express from the eastern part of the State, to be used in a small herd of registered cows. There are now three very fine herds of registered Jersey cattle on the project, and four very fine herds of registered Holsteins. There is a growing interest in the dairy business and the project can already boast of one herd of Jerseys and one of Holsteins that are about as good as any in the State.

Shoshone.

During the week ending May 10, thirty-seven office calls were received.

Some time was given this week to a cooperative sale of wool and to the Forest Reserve herd, but most of the time was given to a cooperative shipment of a car of hogs. Twenty-two men shipped 113 hogs which ranged in size from 70 pounds to 400 pounds. The load consisted of some fat hogs, some fall shoats, and some sows which had lost their pigs. A whole load of stock hogs could not be found so everything in sight was taken and shipped on the open market. This load was shipped to Omaha because it seemed that a mixed load like that would sell better in Omaha than in Denver. The plan of feeding and watering in the car without unloading was

Shoshone (continued).

tried and the agriculturist accompanied the car to market to observe results. Water troughs and feed were put into the car just as when stock hogs are shipped and a bucket was provided for carrying water as opportunity provided along the way. During the part of the trip which was made this week, water and corn were kept before the hogs at all times, except through the dry section where there was no water in the ditches. It seems likely that hogs might not get as good care this way as when they are unloaded for feed and water unless some one goes with the hogs to take care of them, as it is not so convenient for the railroad employees to feed and water them. But it should be easier to get some one to go with the load when they are not unloaded en route because two or three days time is saved. Even when hogs are unloaded it might pay to feed and water in the car too.

Uncompahgre.

Eleven farms were visited during the week ending May 17, and calls were received from fifteen sources.

One day was spent with the county agent in work on corn demonstrations. Samples of several varieties were sent in by the Experiment Station and were given to the farmers to try in checking against the main crop.

Five gilts of the Poland-China breed were selected from a project herd for farmers interested. Two pig-club pigs were also selected for club members.

On Saturday, thirty-one head of registered Percheron stallions and mares were sold at auction at Delta. These were of good quality and averaged \$404 per head. They were brought in from Longmont, Colo. The sale was well attended.

A hog buyer is working on the project and has purchased feeder and fat hogs. He has paid \$18.00 per hundred for fat hogs f.o.b. project. This is a good price.

A live stock shipping association has been formed at Delta and has started shipments.

Yakima.

Six calls were answered during the week ending May 17, twenty-six farms were visited and two office conferences were held. One day was spent in attempting to locate an efficient cooperator in the White Swans district.

The field pea crop is coming on very nicely. A majority of the fields were planted with peas only this year. The rates of planting ranged from 100 to 160 pounds of peas per acre. At this time the heavier seedings appear to have the better growth. It is not possible to distinguish any difference at this time between the growth of vigor of the fields which are inoculated and those which are not, even though examination of the roots shows that the nodules are well developed in the inoculated fields.

MISCELLANEOUS

Conditions on the North Platte Project

Under date of May 20, Mr. Holden writes that farm labor is still very scarce, though he anticipates a better supply in the near future. The season has been dry and cool, but crops are so far making a good growth. A large acreage of winter wheat is doing well, though needing rain or irrigation. The winter-fed lambs have nearly all been marketed at satisfactory prices and the hog raisers are doing well, but the market for beef cattle has not been encouraging. There are indications that the grasshopper pest will again be serious, but extensive preparations are being made to combat it chiefly by poisoning.

On the experiment farm good progress is being made. Six lots of hogs are on pasture, one lot of ewes on alfalfa, and cows and heifers are on grass and sweet clover.

Mr. John E. Watt, of New Mexico, has been appointed Agriculturist for Reclamation Projects. Mr. Watt is now in Washington, D. C., from where he will proceed to Yakima, Washington, to succeed Mr. Roy P. Bean, who has recently accepted the superintendency of the new irrigation experiment station at Prosser, Washington. Mr. Watt will visit several of the Reclamation projects en route to Yakima.



W E E K L Y B U L L E T I N

Of the Offices of

WESTERN IRRIGATION AGRICULTURE
and
DEMONSTRATIONS ON RECLAMATION PROJECTS

Vol. XV.	June 7, 1919	No. 23
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Western Irrigation Agriculture.

Field Notes.

Huntley.

The maximum temperature for the two weeks ending May 24 was 93, minimum 33 and no precipitation.

The weather continued dry and warm during the past two weeks and it was necessary to irrigate late-planted rowed-crops to provide moisture to germinate the seed as well as to irrigate grains and alfalfa. This condition is general over the project.

The following table shows the precipitation since January 1, 1919 and also normal precipitation for that period.

Month	Precipitation	
	1 9 1 9	Average
January.....	.22	.67
February.....	.35	.26
March.....	.67	.65
April.....	.54	1.00
May.....	.73	2.31
Total.....	2.51	4.89

Alfalfa was given its second irrigation for this year, during the week ending May 31. Irrigation of all other crops on irrigated rotations was commenced. Corn emerged May 31 with a fair stand, considering the exceptionally dry weather since planting and cool weather during the latter half of the week.

All other crops on the irrigated plats are making as good a growth as could be expected under existing weather conditions.

Newlands.

Acid phosphate was applied to plats G-2 and G-5 at the rate of 260 pounds per acre.

Early Murdock corn was planted on all of Field G and silage corn on plats D-1, F-3, F-15, and E-1 and E-2.

Three varieties of string beans; four varieties of shell

Newlands (continued).

beans and 4 varieties of beans received from the Office of Seed and Plant Introduction were planted in A 2.

The beets in D 5 were thinned and weeded.

During the week the following fields were irrigated: Field F; Field Y; Field H except plats 3 and 4; Field C, D 2, 4, 7, 8; E 3, 4, 5 and 6.

The cabbage varieties, kohl rabi, cauliflower and a part of the tomatoes were planted in A 2. Seeds of watermelons, muskmelons, squashes, pumpkins and cucumbers were planted in A 1 and 2.

Demonstrations on Reclamation Projects.

Field Notes.

Belle Fourche.

Twelve farms were visited during the week ending May 31, and two meetings addressed. Twenty-five farmers attended one meeting and twenty the other.

The two meetings were held for the purpose of keeping up interest in the cooperative wool pool and for the purpose of completing the arrangements to market the product. The selling end of the wool pool was discussed in order that there would be no misunderstanding as to the disposal of the wool. Another reason for calling these meetings was to counteract activities of wool buyers who are making considerable effort to break up the wool pool. One buyer approached the president of the Vale Association with an offer of 56¢ for his clip. It appeared very much as an effort to cause the president to sell his wool and incidentally break the pool. However, he bought no wool on the trip and from present indications the pool will be formed. At the Newell meeting over two carloads were subscribed to the pool.

The highest price up to date paid for wool in this western country was paid to Smiley & Craig of Belle Fourche for 250,000 pounds of average range clip. The consideration was 61-5/8 cents. This sale will in all probability set the price for wool in this section. The farmers of the project during the past six weeks have been advised to hold their wool for 60¢ and from present indications this suggestion was not far from correct.

Wool from this section is light in grease this year and the shrinkage should be very much less than last year.

Project farmers are paying from 15¢ to 28¢ for shearing. Perhaps the average would be around 17¢. Hand-shearers are getting 15¢ and 17¢. Machine-shearers are getting 17¢ and operator 3¢, making the charge to the farmer 20¢. This same outfit is charging a project Rambouillet breeder 23¢ a head for shearing.

One request was received during the week to locate a pure-bred registered Polled Shorthorn bull. This gentleman wishes to start a registered herd of this breed.

Huntley.

During the week ending June 1, twelve requests for assistance were received and 23 visits to farms were made.

The greater part of two days was spent with matters relating to the stock-judging contest of the project schools, which occurred Wednesday as one of the events of commencement week. Because of unseasonably hot weather, it was decided to take the 21 contestants to the live stock in cars instead of attempting to have the animals driven to Worden. A farm near Worden having registered Shorthorns was visited and the judging of dairy cattle was done at the U. S. Experiment Farm. Much interest was shown by pupils, teachers and parents. Anita won first place, Worden, second and Garnsey, third.

One supposed outbreak of blackleg was investigated and several owners were advised as to preventive treatment.

A conference was held with the county agent and the manager of the Midland Empire Fair regarding a project fair to be held at Ballantine just before the Midland Empire Fair.

Twelve samples of milk were tested.

North Platte.

During the week ending May 31, six calls were received from farmers for assistance, thirteen farms were visited for general live-stock work, and two meetings in the interest of live stock were attended.

Several farms were visited during the week to investigate sickness among the hogs and at some of these places very bad cases of sore mouth in the young pigs were found. These were given the iodine treatment. One case of cholera in a small herd was discovered during the week. One dead hog was burned and the others vaccinated.

A meeting of the Scottsbluff Creamery Board was attended during the week at which plans were discussed for replacing the grade dairy bulls in the valley with pure-bred dairy bulls; nothing definite along this line was done at this meeting. A meeting of the North Platte Valley Dairy Breeders' Association was attended during the week at which the following subjects were discussed: Forming a cow testing association, having a consignment sale of registered bulls, and advertising dairying in this valley. Committees were appointed to report at the next meeting.

Shoshone.

Most of the week ending May 17 was spent on the trip to Omaha with a load of hogs. As stated in last week's report the hogs were fed and watered in the car as when stock hogs are shipped instead of being unloaded every 36 hours for feed and water as has been customary here when shipping fat hogs. This method proved very satisfactory in this case. Feed was kept before the hogs all of the time and they were watered more frequently than when they are unloaded for feed and water. The load gained 20 pounds in weight. Three thousand pounds of corn were fed en route. The corn costs \$5.00 per cwt. at the railroad yards

Shoshone (continued).

while the price at Powell was \$3.75 per cwt. The total cost of shipping was \$1.83 per cwt, which included \$52.00 insurance allowed one man who had a hog die en route. It is believed that it may be more important to send a man with the car when the hogs are not unloaded, but this is important anyway, and it will be easier to get someone to go when he does not have to lay over to feed.

Three runty shoats sold for \$13.50 per cwt., 31 more light hogs sold for \$18.75 per cwt, and the remainder sold for \$20.00 per cwt. It was estimated that about \$340.00 was made by shipping above that offered at home by two men who bid on the load.

Each man's hogs were marked and weighed separately. No hog had more than two clipped spots, but some had a spot on each side. It would have been better if no hog had spots on both sides as it is very difficult to see spots on both sides at the same time, even if they are clipped to the middle of the back, especially if the hogs are small and thin.

During the week ending May 24, four farm visits were made, 25 office calls were received, one other conference was held.

Some time was given this week to arranging for the co-operative sale of the project wool. It seems now that practically all of the project wool will be handled cooperatively.

The herder for the Forest Reserve herd is getting ready to take the herd to the Forest Reserve. He is expecting to have trouble in rounding up the herd to start, because the grass on the range joining the project where the herd is running now was eaten so close last winter and has made such slow growth this spring because of drought, that he expects to have difficulty in holding them close for the several days required to round them up. The cattle are looking good at present.

As there are a few hogs and a few cattle ready for shipment, a trial may be made of shipping a mixed load, though it will be difficult to get anyone to go with the load now.

Uncompahgre.

Six farm visits were made during the week ending May 24, and twelve calls for service received.

Three herds of cows were tested for butterfat in regular herd testing. Some work was done on club work in the way of getting in touch with breeders who would furnish pigs for club members.

The greater part of the week was spent at the office with reports and in preparing newspaper articles for papers. Some time was spent in preparing premium list for Western Slope Fair next fall.

MISCELLANEOUS

"June 4, 1919.

MEMORANDUM FOR MR. SCOFIELD.

"The nematode or eelworm disease of wheat is now known to cause serious damage to this crop in certain of the South Atlantic States. The Office of Cereal Investigations has undertaken to learn the facts concerning its distribution and control and has already found that in addition to wheat other crops, such as rye, emmer, and oats are subject to the disease.

"The eelworm disease is caused by a small nema or eelworm which attacks the wheat or other plants in the seedling stage and is carried upward with the growth of its host only later to attack the head while it is still in the boot. Plants suffering from this disease usually show badly twisted or rolled leaves. Often small galls develop on the leaves, though as a rule they appear in the florets, thus displacing the grain that would otherwise mature. These galls are dark brown in color and resemble small stinking smut balls. They contain the larvae of the eelworm, and, when sown with seed grain, break down and liberate the larvae in time to infect the new crop.

"In the investigation of this disease it is important that we learn all we can about its distribution and its ability to go to other grasses than the cultivated cereals. The Office of Cereal Investigations will be pleased to receive any specimens of grasses showing symptoms characteristic of the disease.

(Signed) H. B. Humphrey,
Pathologist in Charge of
Cereal Disease Investigations."



WEEKLY BULLETIN

Of the Offices of

WESTERN IRRIGATION AGRICULTURE and DEMONSTRATIONS ON RECLAMATION PROJECTS

Vol. XV.

June 14, 1919

No. 24

Western Irrigation Agriculture.

Field Notes.

Newlands.

During the week ending May 31, alfalfa was cut in fields C, D, F and H. Maps of crop growth were made of all alfalfa plats on D and F.

Small plats of each of the following varieties were planted in A 3: Japanese buckwheat, Silver Hull buckwheat, Cow kale, Sudan grass, Kafir corn, Milo, Egyptian corn, Feterita, Black Amber sorghum, Russian sunflowers and lentils.

The peppers, egg plants and tomatoes were transplanted to the garden.

Plats of the following were replanted on A 3; Kentucky blue grass, hard fescue, red fescue, meadow grass, sweet vernal and sheep fescue.

San Antonio.

During the week ending May 31, the maximum temperature was 92, minimum 61, and greatest daily range 29. There was only a trace of precipitation.

The principal work for the week was threshing. Oats selections and varieties, oats in the rotation experiments, and oats for seed increase were threshed. Flax, in the date-of-seeding test and in the variety test in field plats, was threshed. The yields of all crops were unusually good. The average yield of oats in the rotation experiments was 42.8 bushels per acre, the highest yield was 55.7 bushels per acre and the lowest yield was 23.4 bushels per acre. These were much the best oats yield ever obtained in these experiments. Wheat varieties yielded as follows:

Kubanka.....	27.7	bushels	per	acre
Early Baart.....	27.0	"	"	"
Sonora.....	19.2	"	"	"
Club.....	8.3	"	"	"

San Antonio (continued).

A fifteenth-acre plat of winter barley yielded at the rate of 41.0 bushels per acre and a tenth-acre plat of rye yielded at the rate of 26.0 bushels per acre. One variety of field peas yielded at the rate of 34.0 bushels per acre; the average of 18 varieties was 16.7 bushels per acre. The average total yield of vines and peas from the same eighteen varieties was at the rate of 4967 pounds per acre. The highest total yield was at the rate of 6300 pounds per acre. The flax yields were very good. Flax seeded on November 18 made the highest yield in the date-of-seeding test. It yielded at the rate of 17.75 bushels per acre. The average yield of all varieties in the variety test was at the rate of 10.2 bushels per acre, the highest yield from any one variety in the variety test was at the rate of 14.4 bushels per acre and the lowest at the rate of 3.5 bushels per acre. The highest yield was from C. I. No. 152. Poor stands in the flax variety test resulted in somewhat lower yields than would have otherwise been obtained.

All cotton was cultivated and part of the orchards were cultivated. Sorghum varieties on field C4 were weeded. Soil samples for moisture determinations were taken on the corn and milo plats in the rotation experiments.

During the week ending June 7, the maximum temperature was 93, minimum 47, and greatest daily range 31. The total precipitation was .06 inch. No rain of consequence has come in more than two weeks and corn and sorghums are beginning to show the need for more moisture. Corn is in roasting ear stage and a good rain now would make the best corn crop in this section for many years.

The principal work for the week was weeding. The wet weather prevailing through the spring has resulted in much weed growth in all crops. Practically all cotton was weeded and some of the corn was weeded. Orchards were also weeded. Cotton in the rotation plats was thinned on Friday and Saturday. Cotton on field C5, and in the variety test on field C4 was thinned. The first cutting of Sudan grass in the rotation experiments was made. The last seedings of flax in the date-of-seeding tests were harvested.

The two steers used in the pasturing experiment during the past year were sold. The steers had been pastured on oats and Sudan grass during the entire period on the farm except during short intervals last summer when they were fed Sudan grass hay. In the 334 days they gained an average of 570 pounds each or at the rate of 1.48 pounds per day. During this period they had grazed 1-1/2 acres of oats during May, 1918, 2 acres of Sudan grass during the summer of 1918, and 2 acres of oats during the winter of 1918-1919. They were about 2 years old when sold and weighed an average of 1130 pounds each when removed from the oats pasture on May 19, 1919. The steers were shipped to Fort Worth, Texas, and sold by the G. W. Saunders Live Stock Commission Company. One sold for \$13.50 per cwt., the other for \$12.00 per cwt. This was a considerably higher price than anything in the same class had sold for in several days. Cattle with which these two steers were shipped by Mr. Saunders sold for \$10.50 per cwt. Mr. Saunders' cattle had been fed prickly pear and cotton seed cake in

San Antonio (continued)

addition to pasturage. Ours were much the best finished beeves. We have not ascertained the reason for the wide difference in the price of the two steers. The one which sold at \$12.00 per cwt. was not of so good quality as the other and had a lump on his jaw which we feared was "lumpy jaw." That is one reason why we sold the steers at this time. It may be that he sold for less on that account. Two smaller steers have been secured for a continuation of the pasturing work.

Umatilla.

During the week ending May 24, the maximum temperature was 91, the minimum 43 and there was no precipitation. Corn to be used as a measure of the soil variation in field C1, which will be rotation ground another year, was planted.

The trees in the variety test of fruit have more fruit than was thought shortly after the frosts, but there are so many trees which have no fruit that it will not be possible to complete the tests this year.

Mr. Dean talked on alfalfa production at a Grange Picnic at Columbia School.

During the week ending May 31, the maximum temperature was 85, the minimum 44 and there was no precipitation.

The variety test of corn was planted on a piece of alfalfa ground rented across the road from the Experiment Farm. Forty varieties of corn and one of sunflowers are included. A width and distance of planting experiment with corn and sunflowers was planted in Field A2.

A farmers' cooperative creamery has been formed on the project and took over the business of the Herniston creamery on June 1.

The orchard was irrigated during the week ending June 7. The corn in the rotation experiment in field D5 was planted.

The first crop of alfalfa is being cut on the project. The yield is rather light and of poor quality on account of heavy growth of cheat grass. The alfalfa on the farm was spring toothed twice shortly before the crop started and has little cheat grass in it.

Yuma.

The crops irrigated during the week ending May 31 included 7 acres of alfalfa, 7 acres cotton, 3 acres orchard, 1 acre Sudan grass, 2 acres nursery stock and garden, 1-1/2 acres stock pasture and 2 acres of roads.

The cotton varieties in series C and the Durango progenies in series A were thinned and cultivated.

The fig orchard and date palms in series C were disked and hoed. Grain stubble plats in series C and D were plowed.

Yuma (continued).

The following plats were planted to sorghums; six varieties of forage sorghums on plats D-30 and 31, seven varieties of grain sorghums on plats D-32, 33, 34, 35, 36 and 37.

Cowpeas, using both inoculated and uninoculated seed, were planted between the cotton rows on plat A-2.

Maximum temperature recorded during the week 100, minimum 54, greatest daily range 43.

Demonstrations on Reclamation Projects.

Field Notes.

Belle Fourche

Seven farm visits were made during the week ending June 7, and five office conferences were held.

One day was spent in the interest of a county agent in Butte County. In company with the superintendent of the experiment farm, the Board of Commissioners was met and a petition presented requesting the board to appropriate funds for an agent. The board promptly appropriated \$2,400 for this purpose. Coupled with State and Federal funds it is expected a very good agent can be secured.

Another day of the week was spent in the interest of prairie dog extermination in this county, the ranges in some places being taken by the dogs to the exclusion of live stock. The Board of Commissioners was met in company with the representatives of the U. S. Biological Survey. An order was passed by the board taking up county-wide prairie dog extermination in cooperation with the State and Federal authorities. Bait was ordered and arrangements made for its distribution.

A committee meeting was arranged by request of the president of the local fair association to discuss the construction of a live-stock sales pavilion at Belle Fourche. Tentative plans were drawn and arrangements made to work out the plans and method of financing. About \$5,000 will be put into this building. It is expected it will be ready for use this fall.

In company with the Butte County delegation, a meeting of the Tri-State Breeders' Association was held at Spearfish. During the meeting the territory was broadened and the name changed to the Black Hills Pure-Bred Breeders' Association. Representatives from seven Black Hills counties were present. The new association makes it start with 36 paid members, all breeders of pure-bred live stock. The proposition of a sales pavilion at Belle Fourche was discussed; breed committees were selected, and arrangements made to publish a directory of the membership and a booklet giving the names and location with photographs for advertising purposes of the breeders who wish to avail themselves of this opportunity.

Newlands.

During the week ending May 31, there were received 23 calls for assistance and 7 visits were made to farms. Assistance was rendered in one case of prolapsed uterus, one case of milk fever, two cases of retained placenta and one case of impaction. Some time was devoted to official testing for the Holstein herd of H. J. Long. The regular monthly test was performed for eight cows and the seven-day test for two. One of the cows on the seven-day test averaged 100 pounds a day, but because of her very erratic butter-fat test, she made but 22 pounds of butter-fat for the seven days. She will no doubt make near 100 pounds butter-fat for the month.

The harvesting of alfalfa hay in this valley has just begun on a small scale. Within another week practically all ranches will be harvesting hay.

North Platte.

During the week ending June 7, five calls were received for assistance and thirteen farms were visited for general live-stock work. A conference was held with the County Agent in regard to assembling the wool produced in the county at two places and holding a wool sale. Plans were made accordingly and a notice will be sent to the men having wool to have it assembled either at Mitchell or Morrill by Thursday of next week.

Two calls were received to inspect hogs for cholera but in both instances the hogs seemed to have been poisoned and it was supposed they had gotten poisoned bran put out for the grasshoppers. A man north of Mitchell having a herd of Shorthorn cattle was assisted in purchasing a pure-bred Shorthorn bull this week.

The weather here has been so extremely dry for the past month that some of the fields are badly in need of moisture especially the young alfalfa and beets. There are a number of fields of the latter crop that are not up yet and some of the farmers are irrigating and reseeding.

Shoshone.

During the week ending May 31, seven farm visits were made, 20 office calls were received and 1 other conference was held. Eight milk samples were tested.

Arrangements have about been completed for the cooperative sale of the project wool. The farmers will store their wool in a warehouse located on the railway siding in Powell, and three of the leading eastern buyers who buy in this section have promised to bid on it. The present plan is to sell each man's wool separately. Prices being paid in other sections are being investigated and, unless bids are in line with these prices, all bids will be rejected.

Plans are being made for the Shoshone Live Stock Association herd to be started to the Forest Reserve next week. They have been pastured on the range adjoining the project for more than a month, but herding has been very difficult lately because of lack of water and feed due to the drought. Considerable complaint comes from farmers

Shoshone (continued)

who live on the edge of the project that the herders are not keeping the cattle off the fields. Two men who had planned to run cattle on this range all summer tried this week to get onto the Forest Reserve but were unsuccessful. These men are planning to ship their fattest cattle soon. It is likely that they will be unable to keep their cattle off the fields and a test may be made of the new stock law which was introduced in the last legislature by the representatives from this place. The law is that any farmer who turns his stock into the public roads is subject to a fine of from \$10.00 to \$25.00; but stock which accidentally drift into the roads off of the open range are not subject to a fine. Some of the farmers who are being bothered by project cattle which have been turned onto the range adjoining the project claim that for the men who turn their cattle onto the range to habitually allow them to drift into the project roads is practically the same as turning them directly into the roads, and so subject to fine.

Uncompahgre.

During the week ending June 7, sixteen farm visits were made and calls received from 12 sources.

One day was spent in getting in touch with breeders of registered dairy cattle to interest them in the matter of accredited herd testing. It is expected that five herds will be tested the latter part of July.

Two farmers were given assistance in testing milk and cream.

Two days were spent at the office with reports and articles for papers. Some time was taken up with county agent and project manager in determining the extent of the damage done by the frost. Spring Creek Mesa had a temperature of 22 degrees and practically all the fruit was killed. Some winter wheat on the project was frozen and the alfalfa was injured slightly. The freeze was general and it is estimated its damaged the project to the extent of half a million dollars.

WEEKLY BULLETIN

Of the Offices of

WESTERN IRRIGATION AGRICULTURE
and
DEMONSTRATIONS ON RECLAMATION PROJECTS

Vol. XV

June 21, 1919

No. 25

Western Irrigation Agriculture.Field Notes.

Huntley.

The first irrigation of all crops in irrigated rotations was finished by the middle of the week ending June 7. Spring stand counts were made on all flax, oats and wheat plats. The counts show a slight decrease in this year and last year's stand, due undoubtedly to the lack of sufficient moisture for normal germination this spring.

All irrigated plats were trimmed and headlands disked. The corn was thinned and given its first cultivation. The potatoes were cultivated for the first time. Alfalfa is blossoming quite rapidly and will be ready for the first cutting in a few days.

Rotation 67. Field K.--Fall pigs on Alfalfa Pasture and 2% Corn.

No. Hog	No. of Days	Initial Weight	Final Weight	Gain	Average Daily Gain	Pounds Corn Fed	Lbs. Grain per lbs. Gain
4	14	147	167	20	1.43		
22	14	145	164	19	1.36		
24	14	146	162	16	1.14		
64	14	146	162	16	1.14		
65	14	140	155	15	1.07	212	2.46
Total		724	810	86	6.14		
Average		144.8	162	17.2	1.23		

Rotation 69. Field L-IV.--Fall pigs on Alfalfa Pasture and 2% Corn.

45	14	149	158	9	.64		
53	14	153	167	14	1.00		
54	14	151	162	11	.79		
61	14	148	161	13	.93		
90	14	123	132	9	.64	212	3.8
Total		724	780	56	4.00		
Average		144.8	156	11.2	.80		

Newlands.

The alfalfa cut during the previous week was stacked and hauled during the week ending June 7. The yields of the individual plats were as follows:

<u>Plat</u>	<u>Yield</u>	<u>Area</u>	<u>Yield per acre</u>
D 3	490	.34	1441
4	520	.34	1529
7	925	.51	1814
8	845	.46	1837
F 1	610	.25	2440
2	610	.25	2440
6	380	.25	1520
7	460	.25	1840
8	405	.25	1620
10	375	.25	1500
11	425	.25	1700
12	540	.25	2160
13	830	.25	3320
14	785	.25	3140
H 8	1080	.29	3724
9	905	.29	3121
10	1205	.29	4155
11	875	.36	2431
12	1090	.43	2535
13	950	.50	1930
17	920	.34	2706
18	1065	.34	3132
19	610	.34	1794
20	920	.34	2706
21	730	.29	2517
22	660	.29	2276
23	560	.29	1931
24	565	.29	1948
25	280	.29	966
Y 10	1080	.45	2400
11	105	.45	233
12	600	.45	1333
13	110	.45	244
14	255	.45	567
15	305	.45	678
16	255	.45	567
17	0	.45	0
18	320	.45	711

The alfalfa and sweet clover growing along the ditch banks was mowed and foxtail was removed from all the fields. The hedges about the buildings were trimmed.

The following fields were irrigated: Y 189; C; B 9 and 10.

A heavy frost occurred on the morning of June 1 which killed tomatoes and other tender garden stuff in many parts of the project. The only crops on the experiment farm which were seriously injured were the potatoes in H 3 and 4.

San Antonio.

During the week ending June 14, the maximum temperature was 94, minimum 71, and greatest daily range 27. Rain fell on three days, the total precipitation being 1.45 inches. The rain came just in time to be of much benefit to the corn crop, which would have been cut short without another rain.

Very little field work was possible on account of the rains. Some hay was hauled in. Cotton on the rotation experiments and a part of the other cotton was cultivated one day. Some time was spent in weeding the farm roads. Flax varieties in nursery rows were threshed. Cleaning of seed grain recently threshed was started. The remainder of the time was spent in miscellaneous work about the grounds and buildings.

Yuma.

The following acreage of farm crops was irrigated during the week ending June 7: garden and nursery stock 2, cotton 2, alfalfa 8, figs 5, and millet 1.

Nursery stock, berries, sweet potatoes, grapes, pecans and the cotton variety blocks were all cultivated and hoed.

Suckers were removed from all the trees in the fig orchard. The deciduous orchard was disked and harrowed.

Irish potatoes in the garden are being harvested. The cotton on the fertilizer test plats A-1 to 9 was thinned.

The park land was hoed and all park trees were pruned.

Mr. John Martin of the Office of Cereal Investigations was a station visitor on June 8.

The maximum temperature for the week was 105, minimum 51, and greatest daily range 49.

Demonstrations on Reclamation Projects.Field Notes.

Belle Fourche.

During the week ending June 14, eighteen farm visits were made and three office conferences held.

In discussing with sheepmen the prices of shearing this season, it is found that considerable dis-satisfaction exists. Some outfits are very exorbitant in their charges. From 17¢ to 29¢ is being charged at present. Where the average would have been about 17¢ or 18¢ a few weeks ago it has since risen to perhaps 21¢. As a result many sheepmen are considering putting in their own plants next year. Three Little Wonder shearing machines were put in during the past month.

Thirty-two head of registered Hereford cattle were brought to the project by J. L. Williams, a farmer near Vale. These cattle were purchased at the Warren T. McCray Orchard Lake Farm, Kentland, Ind. Three of this number, Bellary Fairfax 688936, Lady Fairfax 570054 and Tilda Fairfax 698267 were purchased at

Belle Fourche (continued).

Mr. McCray's Hereford sale May 21-22. The others were bought at private treaty. The head of Mr. Williams' herd Bellamy Fairfax cost \$3500; the two cows \$3000 and \$2300, respectively.

One cattleman on the lower edge of the project came to the office during the week to request an investigation into the sudden loss of four head of cattle. This farmer is running four hundred head bordering the project on the east. A suggestion that a local veterinarian be called in met with approval. Accordingly in company with him a trip was made to the farmer's home the following day. No cattle having died within four days and no satisfactory evidence being available, a diagnosis was not made. Arrangements, however, were made whereby the farmer was to notify the veterinarian immediately should further losses occur.

At the request of the live-stock editor of the Dakota Farmer an article was prepared on the marketing of project feeder hogs in the eastern part of the State. Heretofore, eastern South Dakota farmers have been buying their hogs at central markets, paying vaccination fees, yardage and feed bills, in addition to the freight home. It is proposed to run "feeder hog specials" of fifteen cars each from the project to points east of the Missouri River. By a little intelligent cooperative effort, it is expected that local producers will receive market price for their hogs f.o.b. cars and the feeders at the other end obtain their hogs cheaper than what they have been receiving them.

Two days of the week were spent in gathering data on the number of farmers pasturing sheep on alfalfa. Up to date thirty have been found. Arrangements are being made with these men to report at the close of the season losses occurring from bloating and from other causes. Also arrangements are being made to gather similar data from the farmers running sheep on the range. A comparison of the losses on alfalfa and on the range will be made at the close of the season.

Huntley.

During the week ending June 7, twenty-one calls were received from all sources and 39 visits were made to farms.

The preventative treatment against blackleg was demonstrated on one farm, 21 calves being vaccinated. Assistance or advice was given in 9 cases of disease or injury of live stock.

Five pig-club members were assisted in matters relating to feeding and care of pigs.

Seventeen milk samples and one of cream were tested.

Assistance was given the live-stock committeeman at Anita in making a live-stock survey of that community chiefly for the purpose of learning the number of cows and hogs desired.

Huntley (continued).

During the week ending June 14, seven requests for information and 3 for assistance on farms were received. Eighteen farm visits were made.

Work on the live-stock survey was continued during the fore part of the week. The last three days were used in a trip to Bozeman to attend a conference of farmers to consider the federation of farm organizations and the erection of a temple of agriculture at Washington, D. C.

Considerable time was spent at the Agricultural College in consultation with members of the faculty concerning live stock problems and many matters pertaining to agriculture. Information regarding prices and quality of registered cattle and hogs in that section of the State was obtained for several farmers on the Huntley Project.

Uncompahgre.

During the week ending May 31, eleven farm visits were made and calls were received from twelve sources.

One day was spent with the county agent in viewing silos on this project. A hollow-tile silo is being manufactured at Delta, of which fifteen were constructed on the project last year. These silos have been watched with interest. Some have reported spoilage, but upon examination of these silos, it was found that this was due to poor workmanship, leaving the inside wall in rough condition and thereby causing air pockets to be found. Spoiled silage was formed on the outside layer next to the wall.

A cold wave struck the project the latter part of the week and on Saturday night the temperature dropped to 22 degrees on part of the project. Practically all of the fruit was killed as well as some of the other crops. The extent of the damage cannot be determined for several days. The hay crop is about ready to cut and is injured slightly.

The bull association was assisted in some of the record work during the week.

Four carloads of the cattle that have been on feed were sent to Kansas City the first of the week. Four carloads were sent to the Denver market and sold at thirteen cents. No returns have been received from the Kansas City shipment. The feeders are discouraged with the market outlook and fear a loss in the feeding operation.

W E E K L Y B u l l e t i n

Of the Offices of

WESTERN IRRIGATION AGRICULTURE and DEMONSTRATIONS ON RECLAMATION PROJECTS.

Vol. XV.

June 28, 1919.

No. 26

Western Irrigation Agriculture.

Field Notes.

Huntley.

The maximum temperature for the two weeks ending June 14 was 95, minimum 34, and precipitation .18 inch.

Dry weather continued during this period and a second irrigation was required for grain crops that were irrigated to bring them up. Indications are that a water shortage will occur later when alfalfa will be irrigated after harvest of the first crop and preparation is being made to deliver water on a two in eight day rotation.

The first crop of alfalfa is being harvested and in most cases is unusually heavy.

The sugar beet acreage which was originally only about one-half of normal will be reduced by fifty per cent as a result of the drought conditions during the past two months. In a large number of cases farmers have failed to secure a stand of this crop by irrigating and will have planted to late grain crops. At the experiment farm, fairly good stands will be secured although many of the plants are just now coming up and the growth is very uneven so that thinning is very much delayed.

Mr. George M. Rommel of the Animal Husbandry Division, Mr. J. M. Stephens of Mandan, North Dakota, and Mr. P. V. Cardon of the Judith Basin station were visitors at the farm.

All plats of alfalfa in the irrigated rotations were cut June 12 to 14. There was a very heavy stand. The average height of the alfalfa was 32.5 inches with a minimum height of 29 inches on one plat and a maximum height of 36 inches on another.

All roadways were disked and alleys hoed. Several plats of potatoes that failed to make a normal stand were replanted. All potatoes were given the first spraying to overcome the potato beetle infestation.

The weather remains extremely hot and dry causing the crops to grow quite slowly.

San Antonio.

During the week ending June 21, the maximum temperature was 91, minimum 66, and greatest daily range 22. Rain prevented field work on Monday and Tuesday, the total precipitation for the week being .45 inch.

The time during wet weather was utilized in cleaning seed grain and in hand threshing flax grown in nursery rows. During the latter part of the week, all cotton in the rotation experiments, and in other experiments, was cultivated. Orchards were also cultivated. Plowing of oat stubble in the rotation plats was begun, the following plats being plowed: A5-13, A5-17, A6-5 and 8, and A4-13 and 17. Sudan grass hay from field C4, and from the rotation experiments, was hauled in.

Mr. C. P. Hartley, in charge of Corn Investigations in the Bureau of Plant Industry, visited the farm on Wednesday. Mr. Butler who is engaged in rust investigation for the Office of Cereal Investigations, visited the farm on one day and made observations on the cereals in the rust nursery. The grains in the nursery were seeded in May. Many of them are severely affected by rust at this time.

Yuma.

During the week ending June 14, the maximum temperature was 102, minimum 55, and greatest daily range 43.

Flax grown by nearby cooperative farmers was threshed here at the station during the first part of the week. The yields recorded varied from 7 to 12 bushels per acre. These men have been offered 8 cents, f.o.b. Yuma, for their flax seed.

Cotton conditions over the project are reported to be better than they were at this time last year. Especially is this true as far as stands on the majority of fields are concerned.

The following field work was done on the station during the past week: cotton on the commercial fertilizer experiment, plats 1 to 9, were cultivated, and the thinning completed. Up to the present time there seems to be no decided difference in growth or appearance between the check plats with no fertilizer and those plats which were treated with varying amounts and combinations of nitrate of soda, potassium sulphate, and acid phosphate.

The cotton variety blocks, C-20 to -25, were irrigated and afterwards cultivated.

The third cutting of alfalfa was begun during the past week. Two plats, D-1 and -2 of Hairy Peruvian alfalfa have been saved for seed.

The date palms growing along the road around the farm are being mulched with straw. It has been observed that this treatment not only conserves the ground moisture but also helps to control the Bermuda grass.

Yuma (continued).

The gains made by the hogs on alfalfa pasture and 2 per cent grain ration of cracked milo are shown in the following table:

No. of hogs	No. of days	Total initial weight pounds.	Total final weight, pounds.	Total gain, lbs.	Average daily gain, lb	Pounds grain fed.	Pounds grain per pound of gain.
8	43	450	670	220	0.64	530	2.41

During the week ending June 21, the maximum temperature was 113, minimum 56, and greatest daily range 49.

The past week has been the warmest experienced this summer, the maximum temperature started at 101 on Monday and reached 113 on Saturday.

All crops, however, are growing nicely. The cotton and sorghum in particular made excellent growths during the week.

On Monday, the following lands were irrigated: cotton, first year alfalfa, sorghum, date, melon, nursery, pasture, fallow, and grounds. All the above cultivated crops were hoed and cultivated as soon as the ground was dry enough to work.

Cotton plats E-2 and -43, and A-23 and -24 were thinned. The fallow plats C-35, -37, -38, -40, and -41, and D-38, -39, -40, and -41, were disked, harrowed, and leveled. Eight varieties of soybeans were planted on plat C-35 and seven varieties of cowpeas on plat C-37. Whippoorwill cowpeas were planted on plats C-38, -39, -40, and -41 in a method-of-seeding test. This same variety of cowpeas was planted on one-half of the deciduous orchard between the tree rows as a cover crop.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Belle Fourche.

Fourteen farm visits were made during the week ending June 21, also, five town conferences with bankers and business men were held.

How to interest farmers in literature published by the Department of Agriculture is giving not a little concern. It is indeed difficult to deliver to the farmers in need of it the valuable information resulting from experiments and other investigational work being carried on for which the Department of Agriculture expends annually thousands of dollars. In addition to the daily field work

Belle Fourche (continued).

done, lists of carefully selected bulletins have been prepared from time to time and published in the project papers. The response is negligible. Conferences have been held during the week with project bankers in which a proposal was made that the local banks each provide a bulletin rack where the best bulletins may be available to the patrons of the various banks upon entrance or departure from the banks. It is hoped thereby to distribute more bulletins to individuals who can not be reached frequently by personal conferences.

The pigs belonging to the sixteen members of the pig clubs were weighed during the week. The month's period of feeding shows an average gain of slightly over one pound a day. The young people are very much interested and are all preparing to complete their project. The feeding test will close August 20th, at the end of 90 days. Competition promises to be very keen.

The dry weather conditions continue and fears are daily expressed that a heavy liquidation of range cattle must soon result if rain is not forthcoming. The grass is very short and dry and the water holes are getting very low or have gone dry. One project farmer this week telephoned the Forest Supervisor inquiring of him as to the possibility of obtaining grazing land sufficient to carry 400 head of cattle for the remainder of the season. Not much encouragement was extended. There are many project farmers in similar circumstances.

Many beet fields have been plowed up because of poor stands. Also, a number of others had to be irrigated to start the seeds. Unless moisture is forthcoming, many beets will be destroyed. The acreage at the beginning of the year was the largest ever planted in this section. The outlook is not encouraging at this time for a bountiful crop.

Over half of the project alfalfa is down or in the stack. The second cutting in some instances is knee high. Present indications are that alfalfa will be at a premium this fall. Especially so if rain does not soon fall. Range men will be after all hay they can get to winter their best stuff.

Preparations are being completed for the three day State Roundup celebration at Belle Fourche, July 3, 4, and 5. Elaborate arrangements have been made to entertain the visitors. Broncho busting, steer riding, trick riding, roping contests, racing, and bulldogging promise to keep up interest.

Huntley.

During the week ending June 21, 22 farm visits were made and 15 requests for assistance were received.

The regular monthly test of three herds, 26 samples in all, was made and two dairymen were given assistance in learning to use the Babcock tester.

Assistance in the way of advice or demonstration was given in 7 cases of sickness among live stock.

Huntley (continued).

It has been decided to have a dairy cattle and hog show at the Huntley project picnic, which is held annually in July at the U. S. Experiment Farm. The date this year is July 19 and the committee set aside a sum of money to be used as premiums. The Agriculturist was requested to assist in making the exhibits as large and as good as possible. Considerable time was given this week to such matters as determining the classes, consulting with live stock owners, and advising prospective exhibitors.

During the month of May, the Ballantine cheese factory paid 74 cents for butter fat. There has been a noticeable increase in the amount of milk received since May 1 due partly to new patrons but mostly to fresh cows belonging to regular patrons. The operator of the factory was lately voted an increase in salary.

Owing to lack of snow and rainfall, this season has not been favorable for beets or small grains. Much of the seed not sown early sprouted slowly and incompletely. Many farmers being unprepared by experience to do so, and not having the machinery to enable them to irrigate beet seed up, reseeded the ground to grain or other crops. At present, a considerable part of the grain fields look uneven, spotted, and without promise of a large yield. The first cutting of hay is one of the best ever produced.

Minidoka.

A considerable portion of the week ending May 10 was used to wind up the details for the Cassia County Calf Club.

This week, a cattle dealer sold approximately 40 head of pure bred Shorthorns at Burley, some of them bringing as high as \$1,000.00 but most of them ranging from \$200. to \$450. This dealer took it upon himself to advertise the fact that this stock was available for the Cassia County Calf Club in hopes that the boys of that county would come in and bid against each other for the stock. This plan, however, did not materialize.

Saturday, May 10, a carload of Holsteins, grades, will be sold at Rupert. Some of this stock is fair but it has been picked up from all over and is being sold from a yard where all sorts of stock have been congregated and it would seem that this way of increasing live stock, especially dairy cows, on the project is not the most practical and feasible way for the best interests of the farmers.

Newlands.

During the week ending June 14, there were received 23 calls for assistance and nine visits were made to farms in response to calls. A trip was made early in the week to the government pasture to arrange for pasturage for sheep. The pasture was found to have made very excellent growth and all live stock seemed to be

Newlands (continued).

farings well. Previous to this year without regulation the territory was badly overgrazed and not systematically irrigated so that little grazing was afforded.

There is much activity in vaccinating cattle against anthrax and black leg at this time. Some loss from anthrax has been reported on the government pasture. This loss was with cattle placed on the pasture before vaccination.

Some time has been devoted to the hay harvest labor situation. The labor situation locally is not considered serious though ample labor is not always to be had on short notice. Three dollars and fifty cents per day is the ruling wage for ordinary hay men. Good hay stackers command more wages.

Up to the present time there has been no market for the new hay crop and no prices have been set so far. Conditions, however, are considered quite favorable for a fair price as practically all old hay has been sold and delivered. The two alfalfa meal mills with a total capacity of 75 tons a day have been working continuously and have partly relieved the situation as regards hay supply.

During the week assistance was rendered in connection with two cases of sterility in dairy cows, two cases of retained placenta, and three cases of impaction.

North Platte.

During the week ending June 14, seventeen farms were visited for general live stock work and four farms were visited to investigate sickness among hogs. There were no cases of hog cholera this week. At one farm where several hogs had died, a post mortem examination was made of three of the dead hogs and in each case the inside of the stomach was found to contain ulcers and to be in a very badly inflamed condition, the intestines were also badly inflamed, and there was "Economy" stock food found in the intestines. This stock food was put before the hogs for the first time two days before any of the hogs died but the owner said that they had been sick ever since it had been before them. The hogs which would drink were given milk and epsom salts and the stock food taken away from them. No more of the hogs have died and none have become sick.

Mr. Meyer, Agriculturist of the Minidoka project, and Mr. John E. Watt, Agriculturist on the Yakima project, visited this project this week.

The weather here is exceedingly hot and dry. A great many of the beet fields have been replanted to other crops and the condition of the fields not replanted is poor, the stand of beets being thin and the plants small. The first crop of alfalfa is being cut this week and the tonnage promises to be about normal. There seem to be fully as many grasshoppers on the project this year as last.

North Platte (continued).

During the week ending June 21, there were twenty farms visited for general live stock work. On three of these farms the hogs were treated for disease and one of these there was a herd of 55 head of hogs which were found to have cholera in a very bad form. These hogs were vaccinated.

Considerable work was done with the dairy interests this week. Seven farms were visited where samples of milk were tested and the men assisted in keeping records, and some more work was done in preparing the milk exhibit for the county fair. One of our farmers was persuaded this week to castrate his grade shorthorn bull and was assisted in purchasing a registered Holstein bull to take the place of the grade.

The members of the Dairy Cattle Breeders' Association are talking of having signs made to read "Pure bred bull used on this farm" and having these signs put up at gates where pure bred bulls are used. It is thought that this method of advertising pure bred bulls will act as a stimulus for a wider use of pure breds.

Beet worms are so numerous in the valley this year that the crop of sugar beets is seriously in danger. Specialists from the sugar factories, in cooperation with the county agent, are holding a great many meetings and demonstrating to the farmers how to control the pest.

Shoshone.

During the week ending June 7, 4 farm visits were made, 45 office calls were received, and 13 other discussions were held. One sample of cream was tested and two articles written for the local newspapers.

On Friday of this week about 26,000 pounds of wool was received from 29 men and stored in a warehouse. Twelve of these men attended a meeting which was held the following night to arrange for selling it. Since practically all of the men live near Powell and have telephones and automobiles, it was decided that no selling committee be elected but that all should be called for any meeting and that those who are absent should abide by the decision of those who are present. It was decided to sell each man's wool separately if possible. At this meeting, some time was taken for the discussion of the proper breed of sheep for the project farms but no agreement was reached.

The cooperative creamery made \$135.00 above expenses during March, April, and May. Dairying has not begun to increase much on this project yet owing to scarcity and expense of labor and the profitableness of other crops.

Some of the men who have been pasturing sheep on alfalfa have been losing a good many from bloat.

During the week ending June 14, 2 farm visits were made, 63 calls were received, and 7 other conferences were held.

Four buyers for eastern wool dealers looked over the pooled wool and made bids ranging from 45 cents to 46 cents per pound on the lot

Shoshone (continued).

as a whole. They refused to bid on each man's wool separately because there are so many small lots and so many of the lots have several different grades of wool. A meeting of the growers was called to consider the bids, 15 men being present. It was decided to wait a short while and look for higher bids since wool on the ranges around here is selling around 50 cents.

A couple of days after this meeting, a Billings buyer came and looked over the wool and bid 46-1/2 cents. He also refused to bid on each man's wool separately. Another meeting of the growers was called, 15 men attending the meeting, and it was decided to hold a while longer and look for higher bids since the wool is in a good warehouse and insured. Several of the men were in favor of selling.

The herder for the Shoshone Live Stock Association got started to the forest reserve the first of the week with most of the cattle. It was found to be impossible to round up all of them because of no place having grass enough to hold them for any length of time. The herder took all that he could get together in a couple of days and will return as soon as possible after the remainder. The grass on the range adjoining the project has about dried up and it is likely that cattle on it will have to be taken back onto the farms or shipped. The grass on the forest reserve is excellent this year. Attempt was made to get more project cattle onto the forest reserve than had been planned but the attempt was unsuccessful.

During the week ending June 21, 5 farm visits were made, 25 office calls were received, and 10 other conferences were held. Two milk samples and one cream sample were tested.

The disposal of the wool was discussed with three buyers but no sale was made. It seems that a mistake was made when the offer of 46-1/2 cents per pound was not accepted.

The herder for the Shoshone Live Stock Association is rounding up cattle which were left when he took the main part of the herd to the forest reserve. He reports feed on the range excellent.

Grass on the range adjoining the project is getting short, so that the man who has taken cattle to the herd there is planning to turn them back to the owners next week. The cattle which can not well be kept on the farms will probably be shipped.

Much of the irrigated land in this part of Wyoming is without water. The streams are getting so low that where no provision is made for storing water, practically no water is available for irrigation. On some farms, cattle have been turned into the wheat fields. Crops are excellent for the most part on this project. The first cutting of hay will be very heavy. However, some men have very poor stands of potatoes.

Uncompahgre.

Ten farm visits were made and calls were received from seven sources during the week ending June 14.

Uncompahgre (continued).

A part of the week was taken up with Mr. May, of the Colorado Agricultural College, working on whorled milkweed. A campaign is being waged to secure information on methods of eradication. There is considerable of the weed on the project and some severe losses have occurred to live stock owners during the last few seasons. A general plan is under way to distribute information regarding the weed and the best known methods of eradication. Some of the farmers are cooperating in experimental work toward control of this weed.

One day was taken up with milk testing for project farmers in regular monthly testing work.

The remainder of the time was taken up in the working of the shipping association at Olathe. A new manager is soon to be selected as the old manager has resigned.

The district futurity for Duroc Jerseys at Western Slope Fair was filled during the week. Ten herds have been nominated.

Many of the crops that at first seemed damaged by the freeze of May 31 are showing signs of coming out in good condition. A large part of the fruit was lost, some wheat, and some corn has to be replanted. Sunflowers will probably be used for replanting. Butter fat is 48 cents per pound this week. Several requests for cows have come in this week. A plan for an importation of cows is being worked on for this fall.

Yakima.

Fourteen calls for assistance were answered during the week ending May 24, twenty-seven farms were visited, and five office conferences were held. One-half day was spent on the Washington Irrigation Experiment Station.

Several stock men in the Toppenish district report very favorable results from the use of sugar beet top silage. The rates of feeding varied from fifteen to forty pounds per steer daily and the length of time the silage was fed varied from thirty to ninety days. In one instances, \$10.00 per ton was paid for the silage. The tops were siloed in various manners. In some instances, the tops were laid in the pits alternately with layers of straw and in others without the straw. A few men went to the expense of digging deep pits and others used combination pits and plank bins. The sentiment favors shallow pits, wide enough to admit driving a team and wagon or a land roller through them, with raised sides formed by the excavated dirt. In a number of instances, the tops were siloed without straw or other absorbent material with entire success. Emphasis is laid upon the desirability of keeping the green tops as free of dirt as possible and of putting them in the pits as fresh as possible. The use of regular silos for tops has not been entirely successful even when some straw or chopped dry corn fodder was used. While this was due to faulty silos in some instances, even the best

Yakima (continued).

results secured in this manner are probably not equal to those secured in properly prepared and filled pits. It appears that the tops require opportunity for the drainage secured in the pits, for the best results. The silage comes from these pits quite dry and very compact while in the silos there is a tendency for it to be very slimy and more odorous. On account of this evident drying out while in the pits, the price mentioned above, that is, \$10.00 per ton, does not represent the value of the green tops as they are hauled from the fields.

Unfortunately, no dependable data are available from the 1913-1919 feeding operations. Both stockmen and dairymen who have had "good luck" with the silage are very favorable to its use. In some instances, the exorbitant claims made for it may be from the fact that these men are unaccustomed to the benefits secured from the winter feeding of succulence in connection with alfalfa hay. In other instances, there is a tendency to credit all the gain by feeding, over the market price of alfalfa, to the beet top silage. On this same basis, one might secure a feeding value for saw dust inasmuch as alfalfa must have a feeding value greater than its market price or there would be no profit in feeding a ration of hay only.

Twelve calls for assistance were answered during the week ending May 31, twenty-seven farms were visited, and one office conference was held. One day was spent on the Washington Irrigation Experiment Station.

Corn and potato plantings are well under way on the entire project. The prospects are for an average potato acreage and for an increased corn acreage. Cheat is more of a pest than ever before in alfalfa fields, both in percentage of infection and in the number of fields infected. Only a comparatively few fields, and a majority of those are in the district "above the gap" and therefore where but a small percentage of the commercial hay is grown, are clean. There has been some discussion on the part of the growers to make an attempt to be allowed to include a small amount of cheat in a special grade of hay.

Four calls for assistance were answered during the week ending June 7, 13 farms were visited, and one day was spent on the Experiment station at Prosser.

The first hay sales of the season were reported to have been made this week. One lot of 2,500 tons moved at \$12. per ton in the stack. Another lot sold at \$16. per ton, baled from the shock, the growers figuring that this figuring equals \$20.50 per ton baled from the stack. The Haygrowers' Association and other large growers are planning to hold all No. 1 alfalfa for at least \$23. per ton, f.o.b. cars, and several have announced that they will hold for \$25. per ton.

Yakima (continued).

Eight calls for assistance were answered during the week ending June 14, 26 farms were visited, and one-half day was spent at the Experiment Station at Prosser. One day was spent at Spokane attending the Northwestern Farmers' Convention and one day was spent at the State College at Pullman.

The Northwestern Farmers' Conference was called evidently principally in the interest of the federation of all farmers organizations and of the proposed Temple of Agriculture at Washington, D. C. The meeting was well attended, probably about 2,000 farmers being present at each session. The enthusiasm for co-operation between organizations and for the national federation of organizations ran high. Definite action was taken toward the federation of the organizations in Idaho, Oregon, and Washington by the decision of the representatives of the various organizations to meet in Yakima on August 4, this year.

Professor Howell, Department of Animal Husbandry, State College, Pullman, Washington, is undertaking work this year in line with the hogging-off demonstrations carried on by this office on the Tieton project. He plans to use field peas and corn for the work this year and expects to supplement the station work with cooperative demonstrations with county agents.

Prospects of good returns from orchards this year are being well started with the cherry prices. Although the cherry crop is estimated at only about 100 carloads, the receipts will be good. Royal Ann's are selling at eight cents per pound and Bings at 12 to 15 cents. One 30 ton crop from a six acre orchard near Grandview sold at 12.5 cents per pound.

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Mr. R. E. Blair has resigned from his position as Agriculturist in Charge of the Office of Demonstrations on Reclamation Projects, effective June 21, in order that he may establish a residence on his homestead on the Yuma project.

THE HISTORY OF THE

REIGN OF

THE GREAT KING
OF GREAT BRITAIN
AND OF THE
IRISH EMPIRE
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SAMUEL JOHNSON
ESQ.
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